

ARMY LOGISTICIAN

40 YEARS 1969–2009

JULY–AUGUST 2009

Modular Sustainment in Iraq

Contracting Agility in LOGCAP-Kuwait
Sustainment-Centric Intelligence
Joint Logistics Analysis Tool

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE AUG 2009		2. REPORT TYPE		3. DATES COVERED 00-00-2009 to 00-00-2009	
4. TITLE AND SUBTITLE Army Logistician. Volume 41, Issue 4. July-August 2009				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Army Logistics Management College, 2401 Quarters Road, Fort Lee, VA, 23801-1705				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 68	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

ARMY LOGISTICIAN

PROFESSIONAL BULLETIN OF UNITED STATES ARMY LOGISTICS

PB 700-09-04
VOLUME 41, ISSUE 4
JULY-AUGUST 2009

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Graphic arts and layout by
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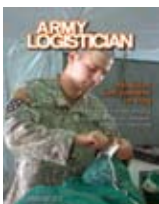
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Cover: A shower, laundry, and clothing repair (SCLR) specialist with the 549th Quartermaster Company, 68th Combat Sustainment Support Battalion, from Fort Carson, Colorado, folds clothes at Patrol Base Murray, Iraq. Before a SCLR team arrived at the patrol base, Soldiers had to wash their laundry by hand or send it on a convoy to Forward Operating Base Falcon and then wait 3 to 4 days to get it back. With the SCLR team deployed, Soldiers had to wait only 24 hours to get their laundry back. The article beginning on page 32 describes how SCLR teams provided clean clothes, hot showers, and textile repairs to Soldiers in the field. Articles beginning on pages 24, 27, 36, 38, and 42 discuss other support provided by units under the 1st Sustainment Brigade in Iraq. (Photo by SPC Andrea Merritt)

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Personnel Services Delivery Redesign

BY LIEUTENANT COLONEL CHRISTOPHER B. NICHOLS

One of the many questions I come across in my travels is this: Why did the Adjutant General Corps give up its personnel support battalions? The answer is rather simple, but the effects of that decision are still being discovered by sustainment units today.

The simple answer is that the Army has transformed into a brigade combat team/brigade-centric force, restructuring brigades to have the organic capabilities they need to accomplish assigned tasks. The long answer is that the human resources (HR) community was told to reduce its support command and control footprint on the battlefield, and the Army's transformation to brigade-centric operations allowed for the transfer of the functions of the personnel service battalion to the brigade S-1. The HR community's restructuring, called personnel services delivery redesign (PSDR), has affected all echelons of the Army structure, from battalion to theater levels.

The fundamental characteristics of PSDR are—

- Empowering commanders to provide HR support to Soldiers with organic HR assets, thereby furnishing Soldiers with specific support at brigade and battalion S-1 sections.

- Eliminating the requirement to pull personnel service capabilities from an external structure (the old personnel support battalions) to support brigade deployments; this was accomplished by creating robust brigade and battalion S-1 sections.

- Maximizing the use of web-based systems, communications infrastructure, and bandwidth to minimize the HR footprint as well as layers of hierarchy; these systems are brigade S-1 enablers.

- Addressing battlefield deficiencies involving casualty, postal, and personnel accounting and strength reporting (PASR) operations in deployed theaters, using modular, scalable, and flexible HR organizations that are commanded and controlled by the sustainment community.

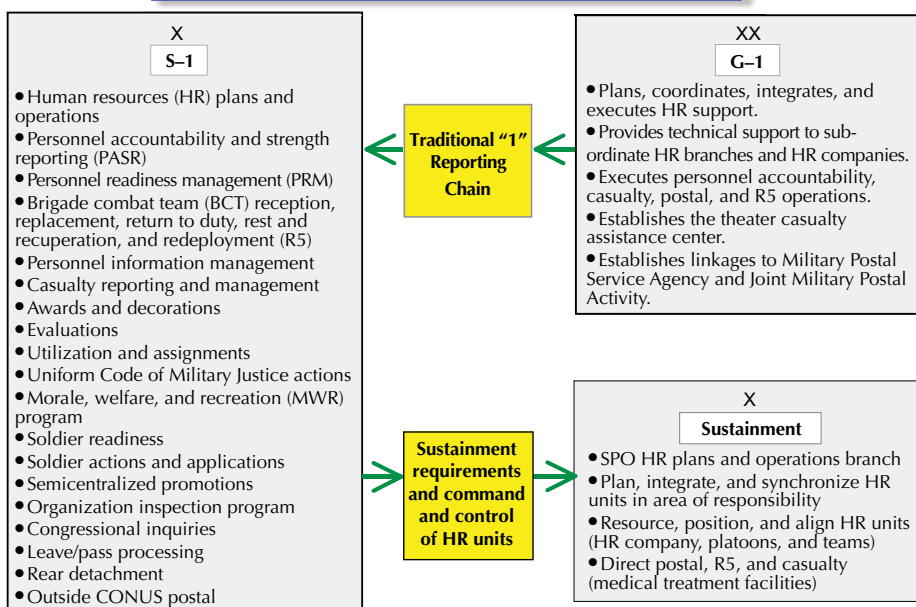
- Using brigade S-1s to provide essential personnel services, PASR, personnel readiness management, personnel information management, casualty management,

and HR planning and operations customer service. The brigade S-1s also provide policy, procedures, and training information and oversight to the battalion S-1 sections within the brigade as directed by the brigade commander and defined by the division, corps, and Army service component command (ASCC) G-1s and Army policy.

- Providing the brigade S-1 section with all of the system accesses and permissions needed to enter data into or receive data from the top of the HR system (the Army Human Resources Command and the Defense Finance and Accounting Service), without having to go through intermediate steps at the division, corps, and ASCC G-1s.

- Providing the capability to communicate digitally via NIPR (Unclassified but Sensitive Internet Protocol Router),

HR Tasks and Functions



The Army Installation Management Command provides continental United States (CONUS) casualty and memorial affairs, transition/retirement services, Soldier Readiness Program site management, reassignment processing, deployment-cycle support, passports and birth registration, Army Career and Alumni Program, family travel, temporary change of station orders, and identification cards and Defense Enrollment Eligibility Reporting System (DEERS)/Real-Time Automated Personnel Identification System (RAPIDS) support for retirees and family members.

The tasks and functions of the brigade S-1 (listed on the left) and how they relate to the higher G-1 (division in this case) and interact with the sustainment brigade, specifically the human resources (HR) operations branch within the brigade support operations (SPO) section.

Casualty Reporting

Develop/refine and rehearse the brigade and battalion casualty tactics, techniques, and procedures (for killed in action [KIA] and wounded in action [WIA], duty status-whereabouts unknown [DUSTWUN], hostile and nonhostile casualties) to—

- Establish commander's critical information requirements. Consider all KIA, all or some WIA, all died of wounds, and key events (such as notification, movement of KIA/WIA, funeral, etc.)
- Internal and external brigade and battalion casualty reporting process and chain.
- Field-grade release authority.
- Rules for communication and notification within the brigade/brigade combat team (BCT).
- Evacuation of remains and wounded (process, tracking, and reporting).
- Letters of condolence and sympathy.
- Summary courts-martial officer, line of duty, and Army Regulation (AR) 15-6, Investigating Officer's Guide, investigations.
- Brigade and battalion S-1 daily update/report with division G-1, medical treatment facilities, mortuary affairs company, BCT surgeon.
- Rear detachment casualty missions.
- Memorial services.
- Mass casualty events.
- Counseling.

(References: MILPER Messages 07-233, 07-236)

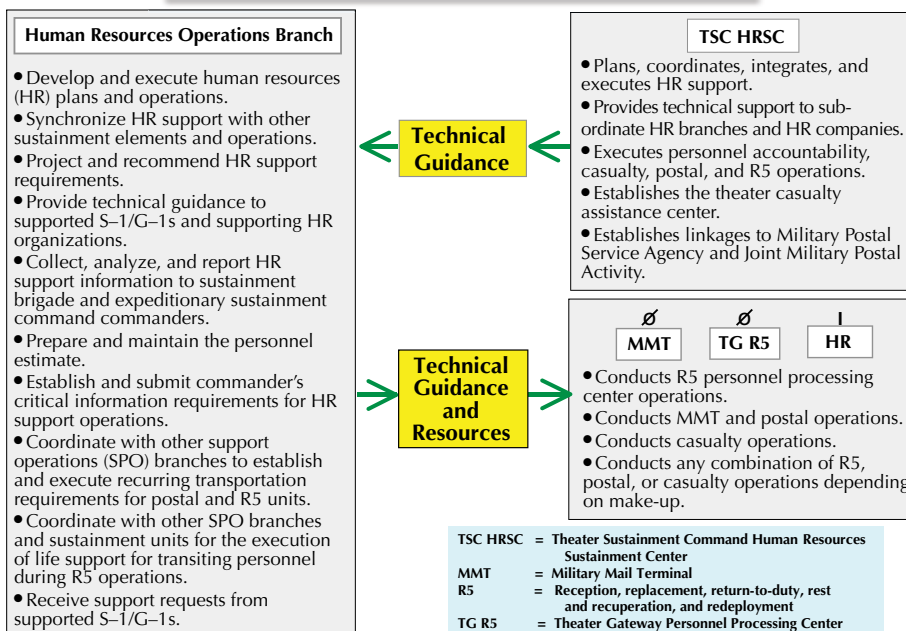
Field-grade review

- Required for all deaths, DUSTWUN, and missing per AR 600-8-1, Army Casualty Program.
- Field-grade reviewer is the battalion commander or designated field-grade representative.
- Authenticate casualty information for accuracy and thoroughness.
 - Verify that data in lines 1-3, 7-9, 12-14, 36, 37, 39, 40, and 61 are complete and detailed.
 - Ensure the "CIRCUMSTANCES" (line 39) are properly written, error free, and answer the "5 Ws":
 - WHO: (was involved?)
 - WHAT: (happened?)
 - WHEN: (did the incident occur?)
 - WHERE: (city, state, country, location, grid, etc.)
 - WHY (HOW): (What were the casualties doing at the time of the incident?)
 - State the facts with respect and without speculation or embellishment. Remember, this information is for the next of kin/family.

AR 15-6 Investigations

- All hostile deaths and friendly fire and suspected friendly fire incidents that result in death or wounding of a Soldier require a 15-6 investigation.
- Submit Supplemental Defense Casualty Information Processing System Report (Remarks: Investigating officer name, start/end date).
- Not later than 60 days after start, forward completed 15-6 reports to: tagcasu@hrc.army.smil.mil.

HR Tasks and Functions



The various levels of the sustainment command interact as they relate to additional human resources (HR) areas of responsibility.

SIPR (Secure Internet Protocol Router), and voice networks to subordinate S-1 sections, sustainment brigades, HR operations branches, HR companies, casualty liaison teams, continental United States personnel, and division, corps, and ASCC G-1s.

During a time of war, casualties are a major concern of the HR community. No matter what portion of the Army Force Generation cycle your unit is in currently, you should take time to review some of the points in the chart above. It will be too late to work through this process during an actual crisis.

Through PSDR, the HR community has transformed to support the modular, brigade-centric Army and the sustainment community. The result is improved HR support to the warfighter that is more effective, more efficient, and more responsive.

ALOG

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Contracting Agility in LOGCAP-Kuwait

BY COLONEL SCOTT S. HARABURDA, LIEUTENANT COLONEL FRANCES A. BLOOM, AND MAJOR ROBERT T. KECK

To end fraud and waste in contracting and improve support to Soldiers, the Logistics Civil Augmentation Program in Kuwait has expanded its responsibilities beyond supporting the LOGCAP contract.

During the monthly U.S. Army Central Command (ARCENT) class for contracting officer's representatives in Kuwait, the briefer from the Logistics Civil Augmentation Program (LOGCAP) would ask, "Does anyone here know what LOGCAP means in Kuwait?" In response, most of the students would answer "KBR," meaning the company supporting the LOGCAP III contract. However, in Kuwait, LOGCAP now means more than the LOGCAP contract. It also refers to the team of logistics support officers (LSOs) and logistics management specialists (LMSs) who support all contracts in the Kuwait area of operations. So, what caused this change?

Traditional LOGCAP

LOGCAP provides contingency support to augment the Army force structure. With large global commitments, the Army must use contractors to provide logistics support in theaters of operations so that military units can be released for other missions. In essence, contractors provide the Army with additional means to adequately support its forces. This is not a new concept for the Army, which has used contractors to provide supplies and services since the Revolutionary War.

LOGCAP was established in 1985 to plan for contingencies and leverage existing civilian resources. When the initial LOGCAP contract expired, it was competed again, with DynCorp International LLC winning the second contract in January 1997. In 2001, the Army Materiel Command awarded the third contract, LOGCAP III, to KBR. Since then, it has been the primary support contract of the Global War on Terrorism in Iraq, Afghanistan, Kuwait, Djibouti, and Georgia. The benefits of the LOGCAP contract to warfighters include offsetting the Soldiers' operating tempo, maintaining high-technology and low-density skills, allowing the transfer of Soldiers from combat support and sustainment units to combat units, and providing capabilities that the Army does not possess.

According to 2008 reports, over 160,000 contractor personnel were employed in Kuwait, Iraq, and Afghanistan. The contracts they administered involved most services and supplies. It was estimated that the

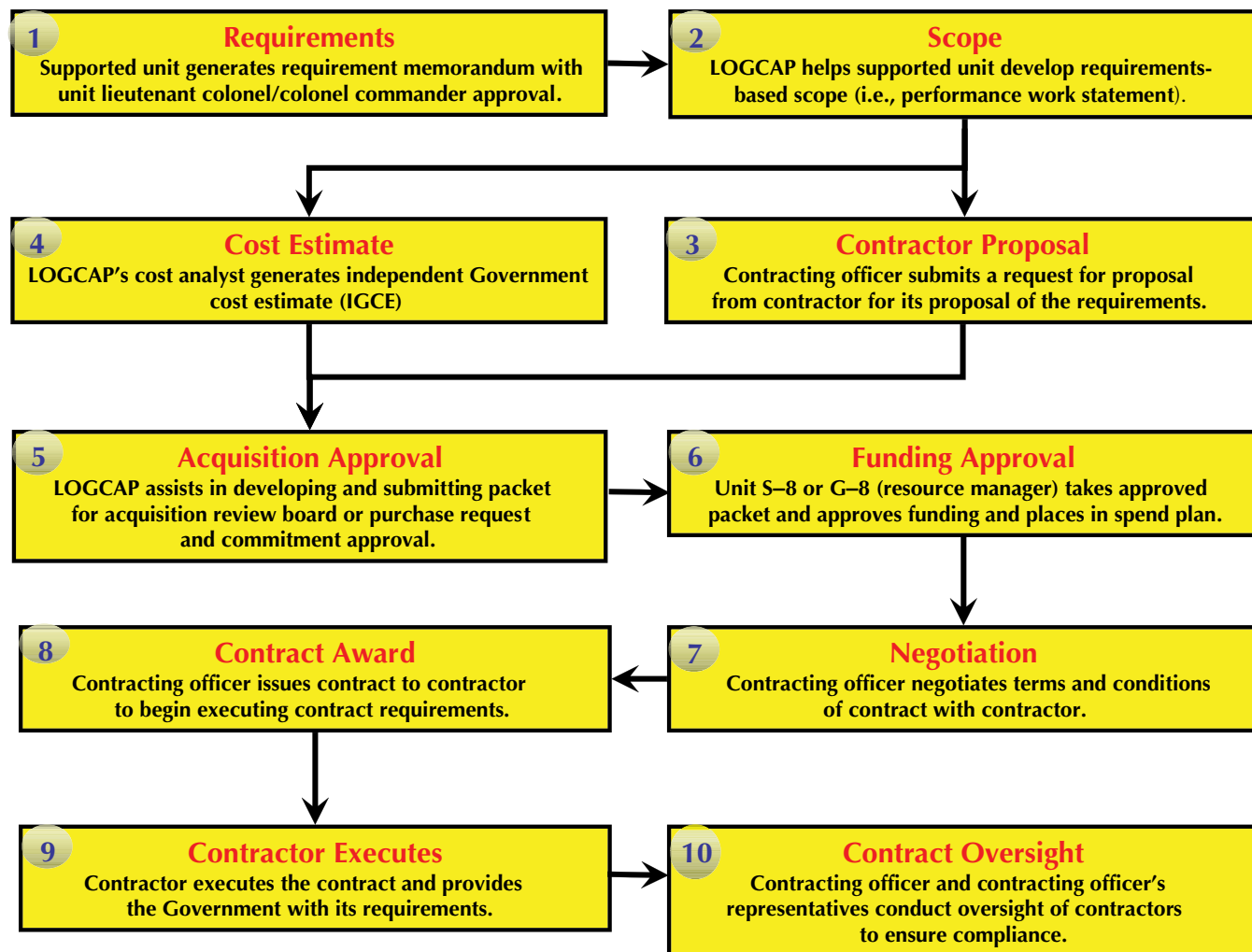


Contractors from CSA, Ltd., discuss training equipment in northern Kuwait with LOGCAP and Defense Contract Management Agency personnel. (Photo by COL Scott S. Haraburda)

military had spent in excess of \$19 billion for the logistics support of operations. As an integral part of the LOGCAP team, the Defense Contract Management Agency (DCMA) administers the LOGCAP contract in theater and provides quality oversight of the contract's execution. DCMA develops, trains, and manages contracting officer's representatives (CORs) in supported units and evaluates contractor performance, ensuring that Federal acquisition programs, supplies, and services meet all requirements.

The Requirements Generation Process

The contracting process begins with a unit that has a task that requires contracting support. The unit contacts the LOGCAP-Kuwait office and communicates the required task to an LSO or LMS. The LSO helps the unit generate a requirements memorandum, which



LOGCAP requirements generation process.

is signed by the first lieutenant colonel or colonel in the chain of command. That officer validates the requirement and certifies that the unit has exhausted all organic resources capable of providing the needed support. After validating the requirement, the LSO helps the unit develop the requirements-based scope that defines the exact need. The new requirement is then written in performance-based language as a performance work statement (PWS).

While developing this PWS, the unit provides estimated cost-generating requirements to the LOGCAP office's cost analyst, who then develops an independent Government cost estimate (IGCE). As this estimate is being developed, the contracting officer issues a request for proposal to a contractor to use for its formal proposal to meet the requirements of the PWS. After receiving the contractor's ceiling price proposal or the IGCE, the LSO assists the unit in developing and submitting a packet for acquisition approval. This approval can be obtained from either an acquisition

review board or by completing a purchase request and commitment form.

Once the acquisition is approved, the unit resource manager, such as the S-8 or G-8, approves the funding and places the budget into the spend plan. The contracting officer then issues a contract to the contractor so it can begin execution of the contract. At the same time, the contracting officer conducts negotiations with the contractor to finalize the specific requirements and costs of the contract. The last step in this process is oversight of the contractor, which is conducted through the administrative contracting officer and his appointed CORs.

Flexibility is essential for effective logistics performance; logistics structures and procedures must be adapted to changing situations, missions, and concepts. Contract support is guided by a legal document (the contract) outlining a PWS for both parties' intent and expectations. Unfortunately, if mission requirements change, the PWS may require modifications if it is

not written in sufficiently broad terms. If the PWS is changed, the contract may require modification, which many times results in cost changes.

The key areas addressed in contract planning are contractor legal status; planning requirements; mission-essential services; visibility; deployment, theater reception, and in-theater management processes; force protection and security; and medical care. Obtaining optimal capabilities involves integrating military and contractor planning, which is effectively accomplished by including LSOs in the planning process.

In planning for LOGCAP support, the art and science of writing contracts is critical to ensuring flexibility, sustainability, and survivability on the battlefield. Every commander and logistician, from the field commander down, must be knowledgeable about the contract process, and the COR must be able to adapt to the constantly changing environment.

Contracting Crisis

During a probe of contingency contracting in 2007, it became clear that a serious problem involving fraud, waste, and abuse existed in Southwest Asia. By that summer, the situation had become so alarming that the Secretary of the Army, Pete Geren, established the independent Commission on Army Acquisition and Program Management in Expeditionary Operations to review recent operations and provide recommendations for improving the effectiveness and efficiency of future operations. This commission released what became known as the Gansler Report in October 2007. The report identified two significant logistics issues:

- Although the number of contractor personnel in the Kuwait-Iraq-Afghanistan theater almost equals the number of U.S. military personnel deployed there, the operational Army does not yet recognize the impact of contracting and contractors on expeditionary operations and mission success.

- What should be a core competence—contracting (from requirements definition, through contract management, to contract closeout)—is treated as an operational and institutional side issue.

When the Gansler Report was issued, over 70 fraud cases were open for investigation, involving about 100 personnel. Confirmed bribes totaled an excess of \$15 million. People with relatively little training or background in Government contracting had committed the significant majority of fraudulent actions. They were either CORs or had other duties related to the contracting process. Many of the investigations involved Soldiers who did not really understand contract law.

When Secretary Geren visited the Kuwait contracting office in September 2007, he was so impressed with the requirements generation process of the LOGCAP-Kuwait office that he directed that it be used for all

requirements within Kuwait. In essence, the LOGCAP process was identified and directed as a management control in the contracting process. Since then, the LOGCAP office has been leaning forward to support the warfighter while the decisionmakers in the United States determine the best way to support them.

Major Types of Services Provided by the LOGCAP III Contract

- Airfield operations
- Ammunition storage and supply
- Base camp operations:
 - Construction and maintenance
 - Electric power generation
 - Food service and dining facilities
 - Hazardous materials management
 - Laundry services
 - Operations and maintenance
 - Water and ice distribution
- Communications and information technology
- Equipment maintenance
- Firefighting services
- Fuel distribution
- Morale, welfare, and recreation
- Transportation

CORs are an essential part of managing contracts. However, the Gansler Report found that they were typically assigned their COR responsibilities as an “extra duty” and possessed no COR-related experience. The result was that CORs were often inexperienced Soldiers who were assigned as CORs because they had the available time. They also received little, if any, training. The report concluded that the number of CORs was insufficient and that they had a high turnover rate, which frequently left many gaps in contract oversight. The Gansler Report recommended that “all logistics officers and NCOs [noncommissioned officers] should be earmarked as potential CORs.”

To ensure that CORs had sufficient operational knowledge of contracting, they were provided with theater-specific COR training. The Army Contracting Command-Kuwait developed a 3-day supplemental COR course that augmented the COR course taught by the Defense Acquisition University (DAU) and the Army Logistics Management College (ALMC). As part of this supplemental course, the students learned about each agency involved in the contract.

The LOGCAP office has a 1-hour block that provides necessary information about its requirements generation process.

LOGCAP Reachback

The Army Sustainment Command (ASC) established a robust contracting and logistics reachback capability to pass the management and execution of specific contracts and acquisition requirements back to the United States. This change was designed to strengthen the management of the Kuwait contracting and logistics operations. The LOGCAP-Kuwait office would provide management and oversight in support of all contracts that were passed back to the ASC offices in the continental United States.

This sounded simple enough when it started in October 2007, but it posed challenges. The LOGCAP-Kuwait office had to overcome the inevitable “not done that way before” obstacle when it took on the reachback effort. For the first time, the LSOs assisted all of the units in Kuwait with developing their requirements, no matter which contract vehicle would be used to provide the capabilities. Of course, it took some education and

marketing to get the word out, but now the LOGCAP office is the first stop for customers trying to get contract services in place in a timely and efficient manner.

In a matter of days after the reachback effort started, the LOGCAP office took on over \$1 billion in annual requirements. For Kuwait, these included supply, maintenance, transportation, public works, information management, training, and services. The Military Surface Deployment and Distribution Command (SDDC) also gave the LOGCAP office requirements for stevedoring and related terminal services for Umm Qasr, Jordan, Qatar, the United Arab Emirates, Oman, Bahrain, Saudi Arabia, and Pakistan.

The LOGCAP office used its effective program management processes to support this reachback effort. The processes included the requirements generation process as well as schedule, risk, and change management processes.

Schedule management. The schedule was the center of the contracting process and logistics plans. This was the foundation on which resource estimation was based, execution of task elements was monitored, and progress toward success was measured. The LOGCAP team frequently used milestones, timelines, and other schedules to assist supported units in obtaining their contracted services and supplies.

Risk management. Risk management does not mean avoiding chances. The LOGCAP office used this process to assess the benefit-to-risk ratio and then developed plans to manage the risks or uncertainties involved in each logistics effort. If the supported units failed to consider risk, the result could be substantial loss for the unit, including the possibility that the logistics program would fail. In assisting units, the LOGCAP office was proactive in obtaining requirements early in the decisionmaking process and in developing contingency plans in case of sudden changes in requirements.

Change management. Change management was critical to ensuring the success of supported units. In Kuwait, changes came from all directions: from supported units, from other logistics units, and from errors introduced into the requirements process, to name a few. The LOGCAP office developed a flexible response capability that assisted in managing the frequent changes in logistics requirements. The biggest



As darkness falls, Army contract employees install a fabric end section on a new maintenance tent at Camp Arifjan, Kuwait. The tents are one way to protect Soldiers, civilians, and equipment from the sun, wind, dust, and high temperatures of the Arabian Peninsula. (Photo by Jim Hinnant, 401st Army Field Support Brigade)

change for the office was the internal change from supporting just one contract under LOGCAP to supporting hundreds of contracts under the reachback effort. It did this by becoming aware of the rationale behind each change, acquiring the abilities to implement the changes, and institutionalizing procedures to sustain the changes.

In addition to moving large and bulky contracts back to ASC, the reachback effort required the accomplishment of more daunting tasks. Since each of the base camps in Kuwait required similar services, such as tents, electric power, latrines, water provision and removal, copiers, cable and telephone services, and facility operations and maintenance, it made sense to consolidate hundreds of individual yet similar contracts into a handful of larger, more robust contracts. The LSOs, as the interface between the supported unit and contracting, constantly monitored expiring contracts and communicated with everyone to ensure that no requirement fell through the cracks.

This logistics effort took a great deal of synchronization of all the required timelines, which normally meant bridging or extending contracts to prevent lapses in service. Obviously, the transitions were of the utmost importance to maintain the continuity of services and were monitored by the contracting officers, LSOs, and supported units. Consolidating contracts reduced costs to the Government by decreasing management fees and increasing efficiencies in performance. In the end, the reachback effort with ASC successfully corrected the fraud, waste, and abuse found in Kuwait in 2006 and 2007.

Transition to LOGCAP IV

LOGCAP IV is the next iteration of the LOGCAP contingency contracting plan. From 2001 to 2008, KBR was the sole contractor supporting the LOGCAP III contract. The follow-on contingency performance contracts have been awarded to three separate companies as “indefinite quantity/indefinite delivery” contracts with 1 base year and 9 option years. Each contract has a maximum value of \$5 billion per year, which means a total annual maximum value of \$15 billion and a lifetime maximum value of \$150 billion.

The use of multiple LOGCAP contractors is designed to reduce risk to the Government, which no longer needs to rely on a single company to execute the entire LOGCAP contract at a time of very high demand for military logistics and support services. Under this new strategy, the three performance contractors may compete for individual LOGCAP task orders, creating a competitive environment intended to control costs and enhance quality. The three companies awarded the LOGCAP IV contract were DynCorp International LLC of Fort Worth, Texas; Fluor Intercontinental, Inc.,



An employee of ITT Corporation creates sparks as he grinds away rough metal from the body of a Caterpillar 621B scraper at the 1st Battalion, 401st Army Field Support Brigade, auto body repair facility at Camp As Sayliyah, Qatar. (Photo by Jim Hinnant, 401st Army Field Support Brigade)

of Greenville, South Carolina; and KBR, which is based in Houston, Texas.

The transition from a single company to three companies entails a great deal of planning and coordination to effect change while continuing to provide service to the warfighter. The incumbent contractor, KBR, will continue services until the transition is complete. The most daunting challenge is the transfer of Government-furnished property, which has to be inventoried, technically inspected, and repaired before it can be transferred. The transfer has to occur from KBR to the Government and then from the Government to the new companies. Extreme diligence is always a must in such situations to ensure that all equipment is accounted for properly.

The LOGCAP IV transition is occurring in three phases. The first phase is transition of services in the Kuwait area of responsibility (AOR), which is the

Major Documents on Contractor Use

- Joint Publication 4–0, Joint Logistics. Chapter II describes key areas involved in planning for the use of contractors.
- Army Regulation 715–9, Contractors Accompanying the Force. Provides the policies, procedures, and responsibilities for using deployed contractors.
- Department of the Army Pamphlet 715–16, Contractor Deployment Guide. Describes current policies and procedures affecting deployed contractors.
- Field Manual 3–100.21, Contractors on the Battlefield. Provides guidance in developing plans for managing and supporting contractors on the battlefield.

smallest of the three AORs that will be transitioning. The second phase will be transition of the Afghanistan AOR, with the Iraq AOR transition following shortly thereafter as the third phase. The actual transition started in July 2008 with site visits throughout Kuwait by several representatives from each of the three contractors. The Kuwait transition has become a test bed for developing lessons learned to ensure smooth transitions in Afghanistan and Iraq. Shortly after the initial visits, the contracting officer sent a solicitation for existing requirements to the three companies. Following award of contracts for these requirements later in 2008, they were transferred to the winning company in the spring of 2009. The current plan is to complete the transition of all existing requirements to the LOGCAP IV contracts by the end of 2010.

The initial success of the LOGCAP reachback and transition efforts can be traced to the LOGCAP-Kuwait office's ability to change its processes quickly as mission requirements shift. As a pioneer in creating logistics doctrine on the battlefield, the LOGCAP program in Kuwait has proven itself to be a value-added force multiplier in ARCENT's full-spectrum logistics effort. It has the potential of doing the same for other global locations. In the meantime, LOGCAP-Kuwait remains focused on customer support and providing full-spectrum logistics support.

According to the Gansler Report, all logisticians should understand the importance of contracting:

Over half of the personnel currently in Iraq and Afghanistan are contract employees. This puts Army contracting (writing, negotiating, monitoring, and achieving accountability and enforcement of the contracts), along with modern (information-based) logistics support, squarely at the forefront of our challenges in supporting expeditionary operations. It also invokes command-level issues: Commanders must have timely situational awareness of contracts and contractor personnel and assets on the battlefield, to properly plan, synchronize operations, and manage the supply chain.

To meet this goal, logisticians should accomplish the following to effectively support the warfighter:

- Understand the processes involved in using contractors on the battlefield.
- Complete the ALMC–DAU COR course.
- Include the effective use of contractors in logistics annexes to operation plans.
- Be flexible in a rapidly changing logistics environment, by doing such things as leveraging and synchronizing both organic and contracted sources of supplies.

In 2003, no one imagined the scope, scale, operating tempo, and duration of this war. Preparations to manage the logistics efforts in future contingencies must leave sufficient degrees of freedom for the unforeseen circumstances of the modern irregular warfare. The bottom line in preparing to employ contractors on the battlefield is that there is no going back. Contractors are now part of force deployment, and as such, they must be included at all levels of logistics planning and training.

ALOG

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Planning Initial Reset for Brigade Combat Teams

BY MAJOR JASON TOMASETTI

Conducting initial reset of a brigade combat team (BCT) within 6 to 8 weeks of returning from Operation Iraqi Freedom or Operation Enduring Freedom can be critical to the rest of the brigade's reset and reconstitution. By targeting initial capabilities for reset during the brigade's block leave, the BCT can start unit equipment reset (including new equipment issue) and individual training relatively quickly.

Planning for the initial reset is necessary, and roles and responsibilities should be determined 4 to 6 months out so that coordination can start with rear detachments and home-station organizations. The BCT support operations office (SPO) or BCT S-4 will likely be the starting point for reset operations planning. The BCT must coordinate with its rear detachment, Army field support battalion (AFSBN), directorate of logistics (DOL), and division or post G-4 to determine how, where, and when equipment will be reset and what the brigade's priorities are (specifically, in what order units and systems will be reset). Army Materiel Command brigade logistics support teams can aid this coordination if they are deployed with the BCT.

The target of the initial reset is debatable, but should include Standard Army Management Information Systems (STAMISs), individual night vision devices (NVDs), and individual weapons (to include M240 machineguns).

STAMISs include the Standard Army Maintenance System (SAMS), Standard Army Retail Supply System (SARSS), and Property Book Unit Supply Enhanced (PBUSE) and are supported by the very small aperture terminal (VSAT), and Combat Service Support Automated Information Systems Interface (CAISI).

STAMIS reset allows units to reset unit-level equipment, order requirements to fill shortfalls, and track items sent for sustainment-level reset.

At a minimum, resetting STAMISs should include—

- Cleaning computer hardware internally and externally.
- Wiping hard drives and reimaging them with software and all updates.
- Loading home-station unit information, including unit identification codes and Department of Defense activity address codes.
- Inspecting and repairing VSATs and CAISIs.
- Conducting a STAMIS communication gunnery by setting up the satellite dishes and computers and ensuring all systems (including VSAT, CAISI, SAMS, SARSS, and PBUSE) can communicate with one another.

By resetting individual weapons and NVDs, units should be able to start individual training shortly after block leave while the unit equipment needed for unit- and collective-level training is being reset.

Reset for weapons and NVDs consists of conducting technical inspections, bringing equipment back to the -10 and -20 level, and turning in items that are deemed nonreparable.

When redeploying, units must carry back initial reset items as baggage to accompany troops. While individual weapons are easy to carry back, units might be inclined to ship back NVDs and STAMISs in unit containers, which can result in a 6-to-8-week wait. This will hinder the BCT's initial reset operations. STAMIS laptops are easy to carry back, but strategic air support may be necessary to move the VSAT systems. Submitting this strategic air request early in the redeployment planning process is important.

Having the right people in place to facilitate the initial reset is crucial, too. Battalions must appoint competent people to oversee reset while the rest of the battalion is on block leave. Key personnel include unit armorers to allow technical inspectors into arms rooms, a supply person to code out weapons or NVDs as needed, and STAMIS maintainers and operators to oversee the STAMIS reset. These people might not be readily available within the rear detachment, so rear-detachment commanders must identify candidates early on and send them to the proper training, such as the Army Armorer School, before units start to redeploy. For units still lacking the right expertise in certain areas, these initial reset facilitators are good candidates to include in the advanced redeployment party.

Tracking the progress of reset falls on the shoulders of the BCT SPO and S-4 and the AFSBN. Tracking mechanisms must be in place to ensure that all the equipment is reset but is not inspected more times than necessary. These mechanisms must be established early in the planning process to ensure that the proper data are collected and used to keep the battalion- and brigade-level leaders informed of reset progress. Adequately showing this progress to the brigade's leaders will instill confidence in the reset process, making reset easier once all the deployed equipment returns to home station.

ALOG

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Pit Crew Maintenance in the Brigade Support Battalion

BY MAJOR TROY K. KING

In the operational environment of Iraq, equipment takes a beating under the strain of harsh heat and dust, generating challenges to maintaining combat readiness. While deployed, the field maintenance company (FMC) of the 626th Brigade Support Battalion (BSB), 3d Brigade Combat Team (BCT), 101st Airborne Division (Air Assault), knew it would take outside-the-box thinking and inventive strategies to combat the elements and the strain on equipment.

So, Soldiers implemented “pit crew maintenance,” which is similar to how National Association for Stock Car Auto Racing (NASCAR) mechanics keep their drivers’ vehicles in top condition. The distribution company relied on the FMC to keep its vehicles moving on the roads of Iraq, and the FMC took it personally when missions failed because of vehicle maintenance problems.

Like a NASCAR Pit Crew

Soldiers may say, “What is pit crew maintenance in the BSB? This is not NASCAR; we are in combat. Where is this written in our doctrine? Where is this

found in the Army regulations?” Pit crew maintenance is nothing more than what maintenance Soldiers have been practicing since the early days of the Global War on Terrorism: replace the part and continue on with the mission, ship the not mission capable (NMC) part back, and let the sustainment maintenance team rebuild the part. Pit crew maintenance best describes the method that Soldiers adopted to maintain a fleet with a high operating tempo (OPTEMPO) and allow them to deliver supplies to the forward support companies (FSCs).

In the pits of NASCAR races, crews focus on component replacements in the hours before the race. With no time to rebuild an engine right before a race, the crew replaces the engine. The time spent in the pit area often determines the outcome of the race. In a BCT, a vehicle’s time spent in the bay drives down the BSB’s ability to support the BCT. Fixing the vehicle and getting it back on the road is the FMC mechanics’ objective.

Now that the Army has moved from a four-tier maintenance system to a two-tier system (field and sustainment), maintenance Soldiers are consolidated in one

A 626th Brigade Support Battalion Soldier rotates the tires of a vehicle belonging to the 3d Brigade Combat Team, 101st Airborne Division (Air Assault).



location to perform maintenance in a battalion. Transformation consolidated a brigade's maintenance Soldiers into the FMC and the maintenance platoons belonging to each FSC. Units do not have the time to diagnose and rebuild components at the field maintenance level. In a NASCAR race, the pit crew changes the engine or major subcomponent and gets the vehicle back on the track. Our FMC did the same thing in Iraq, but in our case, we got the vehicle back in the convoy.

NASCAR pit crew maintenance is a team effort. The car will not operate efficiently if it is not in top condition before the race. Before the race begins, the car is checked from bumper to bumper for flaws in the frame, engine, and transmission. Military vehicles require the same treatment. Pre-mission readiness is the FMC's greatest concern since its goal is to ensure that vehicles do not break down on the road. All military vehicles require regular services, and post-mission checks normally involve preventive maintenance services.

The Effect of High OPTEMPO on Equipment

The Army's OPTEMPO has been high over the past 6 years, so its equipment has continually received upgrades and overhauls. In the early years of Operation Iraqi Freedom, Soldiers placed armor plates on vehicles to protect themselves and complete their missions. The increased and excessive weight pushed the vehicles past their physical limits.

The palletized load system and high-mobility multi-purpose wheeled vehicle (HMMWV) have been through various rebuild programs that have only addressed the components of the vehicle and not the frame. The HMMWV was upgraded from the M1114 to the M1151 and is now being replaced by the mine-resistant ambush-protected vehicle to address the weight issues. But because of the constant upgrades and limited production of armored vehicles, units still use the M1114s to accomplish their missions.

In NASCAR, stress on the frame means reduced performance on the track, which drastically affects the outcome of the race. The same is true for Army vehicles. A prime example is the increased weight of the front cab of the family of medium tactical vehicles. When the engine compartment is opened for repairs, the excessive weight causes fractures at the pivot points. Currently, it takes the crane of an M984 heavy expanded-mobility tactical truck wrecker to open and hold the weight of the cab to prevent it from snapping off the frame.

The Army tends to react to the effects of problems instead of just fixing the problems. For instance, the Army will replace components with rebuilt parts instead of installing new engines or transmissions. Constant care is required to maintain and increase the lifespan of the vehicles in Iraq that do not receive new parts.



Soldiers of the 626th Brigade Support Battalion's field maintenance company change a vehicle's motor oil. Preventive maintenance is very important in the high operating tempo environment of Iraq.

With the increased OPTEMPO and constant demand on convoy vehicles, an FMC must embrace the two levels of maintenance. Although the mechanics are fully capable and equipped to rebuild the parts they are replacing, an FMC cannot allow a piece of mission-essential equipment to be out of commission while it waits on repairs. A fast equipment repair time is critical to meeting the requirements of the BCT's missions.

Annual Services Conducted Semiannually

The 626th BSB's FMC identified the need for a more comprehensive plan to maintain an increased vehicle readiness rate in combat. During a year-long deployment, the BSB's vehicles experienced summer temperatures of 130 degrees and a winter that produced snow in Baghdad for the first time in 20 years, which put additional stress on vehicles and their components. Regular services were important to keeping the vehicles on the road.

The Army suggests maintaining vehicles on annual, semiannual, and quarterly schedules, with a different set of services prescribed for each schedule. Instead of performing the semiannual and quarterly sets of services, our battalion performed the annual set of services on each vehicle every 6 months.

The warrant officers and senior noncommissioned officers found that the quarterly and semiannual services increase the downtime of mission-essential vehicles and do not address every area that is necessary to maintain the vehicle in top condition. The annual service is a more comprehensive check that is needed to maintain vehicles in a high state of readiness and has been shown to decrease breakdowns on the road. The prescribed services schedule consumes considerable time, and our FMC found that performing the annual services twice as

often was more efficient and effective than the traditional schedule.

Preventive Maintenance Checks and Services

Vehicles are selected for missions based on the requirements to support the BCT. If a distribution company vehicle broke down just 5 hours before a mission, the company would not have time to find another vehicle and prepare it for dispatch. But since the FMC made sure that each vehicle regularly went through a series of preventive maintenance checks and services, one would already be mission ready and prepared to go at a moment's notice.

The BSB dispatched vehicles every 7 days (instead of daily) to ensure that each vehicle received proper maintenance attention. Each platoon in the distribution company dispatched vehicles on different days to increase the number of mechanics available to surge on maintenance issues. All vehicles that went through the inspection section received a bumper-to-bumper certified check. Each vehicle was checked for leaks and stress fractures and insufficient tire pressure, fluids, and tire condition. This process made up the principal operator preventive maintenance checks and services before the vehicle was inspected by the mechanics.

Next, the vehicle moved to the ground support equipment (GSE) section for a thorough air-conditioning check. No vehicle is fully mission capable unless the air-conditioning functions at full capacity. The GSE section inspects all the components of the air-conditioning system and completes the check by blowing air through the system with an air compressor to ensure free movement of air in the vehicle. If the vehicle fails any part of the inspection process, it is NMC and the operator takes it to the motor sergeant to be repaired immediately.

The Department of the Army (DA) Form 5988-E, Equipment, Maintenance and Inspection Worksheet, is initialed off at the inspection by the GSE and automotive sections before any mission-essential vehicle receives approval to be used in a convoy. This process decreases the requirement to dispatch each vehicle daily and ensures each vehicle receives the highest level of maintenance attention before each mission.

During-Mission Maintenance

The driver and vehicle commander play a vital role in equipment readiness. During convoys, they see, hear, and feel what the vehicle is doing. Like the NASCAR driver who radios in and reports the slightest shaking or vibration to the crew chief, the driver and vehicle commander report the slightest changes in the performance of the vehicle to the inspection section.

What might be just squeaking or shaking to a driver means much more to a mechanic, and a driver's input will help the inspection team find problems. During the

inspection process, the mechanics can only visually examine the vehicle and may not hear the vibrations or squeaks that could lead to equipment failure on the missions.

Post-Mission Checks

Like a NASCAR pit crew, the inspection section's mission included a final step to ensure all mission-essential equipment remained in the highest state of readiness. After returning from a mission, all mission-essential vehicles passed through the inspection section to be checked bumper-to-bumper, just like during the pre-mission checks, before being placed back on the line. The faults were captured on the DA Form 5988-E and, if at all possible, fixed on the spot. Vehicles that failed the inspection proceeded to the maintenance bay for repair. The maintenance section identified which parts were required to repair the vehicle and placed the parts on order before moving on to a new job. No job was complete until the parts were replaced or on order.

The 626th BSB took the fight to the enemy. For the FMC, the enemy was 5 years of wear and tear on critical, mission-essential equipment. Conducting the annual services set every 6 months kept all but two M931 5-ton tractors from breaking down on the roads.

Preparing a racecar for a big NASCAR race is a 7-day process. After a race on Sunday, the car receives a post-race check to identify imperfections and look for areas to improve performance. Then, a total overhaul of the vehicle begins on Monday to prepare for the next race. Throughout the week, parts are stripped, cleaned, and replaced. For the BSB, this process started when the vehicle returned from the mission and entered the inspection bay for a post-mission maintenance check.

The creation of the pit crew maintenance plan addressed a comprehensive dispatch plan with a strict checklist for all vehicles. The inspector certified the mission readiness of all vehicles before approving them for future combat missions. The goal of this procedure was a 24-hour turnaround on all NMC equipment. The aggressive plan allowed the BSB to enjoy a readiness rate of 96 percent in the first 6 months of the deployment.

Mark Martin, NASCAR driver for the number 8 car while it was on the U.S. Army Team, stated that after a bad day on the track, "We're like our Soldiers; we don't quit, we just fight harder to complete the mission." **ALOG**

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THE AUTHOR WOULD LIKE TO THANK CAPTAIN TAMMY BOGART FOR HER CONTRIBUTION TO THIS ARTICLE.

Sustainment-Centric Intelligence

BY CAPTAIN GREGORY LARKIN

“The art of being wise,” psychologist William James once wrote, “is the art of knowing what to overlook.” The intelligence requirements of a sustainment command demand that more be done with less. The far reach of convoy missions passing through multiple and diverse battlespaces, a lack of organic intelligence collection assets, and the absence of a reliable theater-wide attack reporting system all converge to make intelligence seem like an impossible task for the frequently undermanned and untrained intelligence sections of sustainment commands. However, if a sustainment command intelligence section can develop tools that focus only on the trafficked main supply routes (MSRs) and alternate supply routes (ASRs) and depend on the battlespace owners’ intelligence sections for area analysis, it can not only meet its own unique requirements but also afford to function as a regional route analysis provider for all patrols and convoys passing through its linear-route battlespace.

Limited Resources and Unique Needs

Sustainment command intelligence sections are often overworked and undermanned. This comes as no surprise because sustainment commands are often considered the handle of the warfighter’s spear. Although maneuver commands enjoy intelligence sections staffed with analysts—enlisted Soldiers, non-commissioned officers, and officers from a variety of intelligence backgrounds—sustainment command

intelligence sections are generally staffed by one or two Soldiers who focus solely on intelligence analysis. Often these Soldiers are pulled from other sections, such as the S-6 or the motor pool. Only occasionally are these analysts trained at the Army Intelligence School at Fort Huachuca, Arizona. In the course of my 15-month deployment experience in Iraq, only one of five adjacent combat sustainment support battalions (CSSBs) had Army Intelligence School-trained personnel and some fell drastically short, with no formally trained intelligence personnel at all.

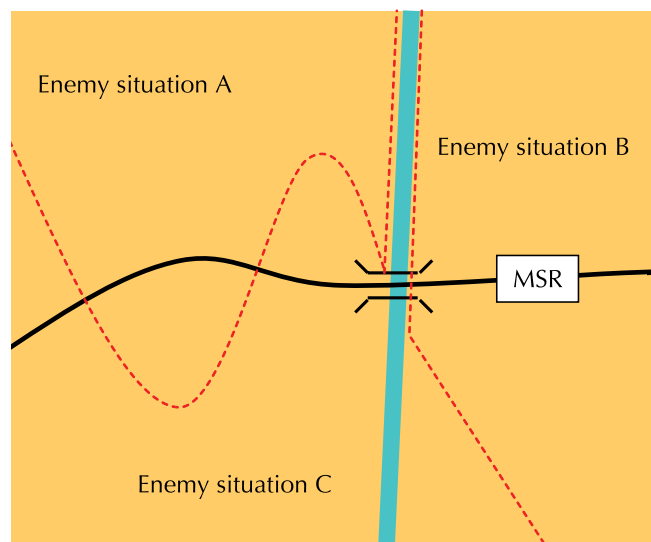
The 264th CSSB intelligence section was lucky to deploy with one functional area 35D (all-source intelligence officer) lieutenant and two military occupational specialty 35F (intelligence analyst) E-3s. All three of us were doctrinally trained at the Army Intelligence School, but we faced other limitations inherent in providing intelligence support to the distribution fight. So during our 15-month deployment, we honed our section’s role down to just a few key tasks. What follows is a guide for what to focus on and what to overlook when providing for the unique intelligence needs of a sustainment command.

The distribution mission requires unique intelligence support, which is dictated by unique mission characteristics. The logistics convoy mission is fundamentally different from all other combat missions. Some convoy mission characteristics, such as geographic span, multiply and complicate intelligence requirements. Other characteristics, such as the fundamentally defensive nature of the logistics convoy and the linear nature of its area of operations, greatly simplify intelligence requirements.

Geographic Span

Sustainment commands sustain the hubs that supply the warfighters. Sustainment convoys move supplies between distant logistics bases, which are connected by MSRs and ASRs. These routes pass through many battlespaces occupied by diverse land-owning commands with varied enemy situations. The far reach of each logistics convoy mission requires intelligence analysts to track multiple evolving threats.

The intelligence analysts of conventional combat power battalions focus on their locality while higher commands are tasked with the regional picture. However, the analysts who support any sized command tasked with logistics convoy missions must track the many diverse localities that their logistics convoys pass through (see chart at left). This requirement is



Convoys traveling along a main supply route (MSR) may travel through several different enemy situations

compounded by the facts that each battlespace owner has its own way of doing things and that shared intelligence products vary in quality and format. For example, some battlespace owners maintain online archives of route assessments, while others may only provide area assessments with no specific analysis of the MSRs and ASRs running through their areas. Still others provide nothing at all. Therefore, a passive SIPRNet-browsing analysis of shared intelligence products will leave a logistics convoy mission intelligence brief riddled with gaps. (SIPRNet is the Secure Internet Protocol Router Network.)

For these reasons, sustainment command intelligence analysts must become masters of networking with fellow analysts. Face-to-face meetings with all pertinent intelligence analysts of battlespace-owning commands are preferred because the sustainment command intelligence analysts will be asking them for assistance frequently. This is the perfect opportunity

The 264th CSSB intelligence section was lucky to deploy with one functional area 35D (all-source intelligence officer) lieutenant and two military occupational specialty 35F (intelligence analyst) E-3s.

for the analysts to get on the road, participate in a logistics convoy mission, and visit the intelligence analysts of battlespace-owning commands at each stop along the way. It is also the perfect opportunity for the analyst to serve as the bridge between the commander's staff and the Soldiers on the road in order to build firsthand situational awareness.

Sustainment command intelligence analysts should rely on their battlespace-owner counterparts to be the subject-matter experts on the status of the threat in their area. Convoys rarely, if ever, deviate from the MSRs and ASRs, so sustainment command intelligence analysts can remain focused on the routes themselves. Only by maintaining this focus can an analysis complicated by the logistics convoy mission's span of many diverse battlespaces be made a manageable task.

Offensive Posture but Defensive Nature

One unique characteristic that differentiates the sustainment mission's intelligence requirements from those of all other combat missions is the defensive nature of logistics convoys. Although Soldiers on logistics convoys are trained to maintain an offensive posture, the convoys do not seek out and destroy threats. On the contrary, logistics convoys aim to avoid threats. This led to the eventual development of the tactical mantra, "Avoid them and see them," referring to how our logistics

convoys counter the primary threat on MSRs and ASRs—the improvised explosive device (IED).

The defensive nature of the logistics convoy mission simplifies the commander's decision requirements. Although logistics convoys are escorted by gun trucks tasked with providing security, the convoys avoid the enemy at all costs, unlike patrols that seek out and destroy the enemy. For example, a logistics convoy will be planned to travel the route with the lowest threat at a time of day when the threat is historically at its lowest. So while intelligence analysts of battlespace-owning commands are assembling targeting packages or leafing through pages of interrogation reports, sustainment command intelligence analysts are simply figuring when and where threats are likely to occur on the routes in order to develop a plan to avoid engagements altogether.

Linear Area of Operations

Perhaps the best thing sustainment command intelligence analysts have going for them is that their areas of operations are strictly linear. Except for the rare case when a logistics convoy zigzags through the streets and alleys of a major city, a sustainment command's battlefield consists of a straight line drawn through vast expanses of battlespace-owner territory. Like the defensive nature of logistics convoys, this unique characteristic greatly simplifies the demands on their under-resourced intelligence sections. With a purview limited to enemy activity on the routes, the section's primary task becomes identifying attack trends along the linear spans of MSRs and ASRs in order to support plans to circumvent and counter attacks.

Sustainment-Centric Intelligence Products

According to the sustainment-centric concept of intelligence operations, analysts should focus on creating intelligence products that enable the commander and Soldiers on the road to prevent and avoid threats while depending on battlespace owners' intelligence analysts to provide all other intelligence support. This makes the demands on the frequently under-resourced sustainment command intelligence sections manageable. However, customized tools are necessary for analysis focused strictly on the vast, linear expanses of logistics convoy areas of operations. Like all good intelligence analysis, sustainment-centric products must begin with good reporting.

The biggest obstacle to meeting a sustainment command's unique intelligence requirements is the absence of a uniform, theater-wide enemy-activity reporting system that can provide the data needed to form a thorough route threat assessment. A few centralized databases collect enemy-activity reports, but none of the databases are uniform and theater wide, and none

allow for the entry of the key pieces of data needed by sustainment command intelligence analysts.

The databases currently available include the “who, what, when, and where,” but they do not provide enough detail to support useful trend analysis. Moreover, reports are actually keyed into the system by personnel at levels of command that are too far removed from the incidents to provide accurate details. Fundamentally, the status quo for incident reporting is flawed: It is not uniform, it is not theaterwide, it does not allow for the entry of details needed for route analysis, and data are entered too many echelons above the actual unit involved in the incidents.

Ideally, a uniform, theater-wide standard would cater to the needs of sustainment command intelligence analysts conducting route threat analysis. Each entry in a database of attacks would include data fields such as—

- Whether or not the attack occurred on a route of any kind.
- The name of the route on which the attack occurred.
- If the targeted unit was a logistics convoy or a patrol.
- The specific initiator type of an IED (for example, hacksaw-blade pressure plate, Christmas tree lights, victim-operated push-button, or command wire).
- The specific munitions or explosives type used (such as 120-millimeter artillery rounds or homemade explosives).
- The location of an IED emplacement in the road (such as shoulder, median, or lane).
- The order of march of the attacked vehicle.

This is not an exhaustive list of the layers of description needed for each incident, but it is a good start. A complete and exhaustive set of data fields should

include mutually exclusive options for each data field so that no incident details are left open for interpretation.

The enemy-activity reporting system needs to be transformed. More data are needed in addition to the minimal “who, what, when, and where” in order to create sustainment-centric intelligence. Such a transformation would certainly consume resources, but intelligence is incredibly important to our asymmetric warfighters. Leaders should institute a reporting system that emphasizes attack-trend analysis. A reporting system and incident database as described here would greatly simplify the route threat analysis process.

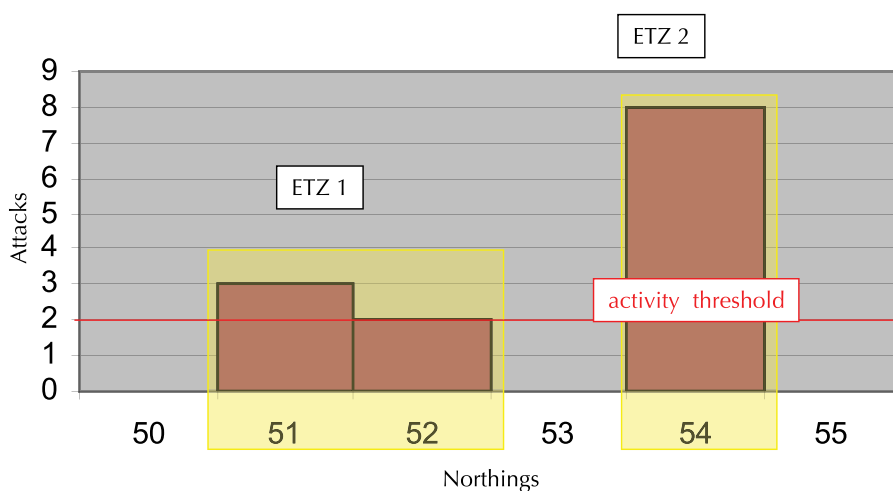
Developing Our Own Warning System

In the absence of this ideal incident database, the 13th Sustainment Command (Expeditionary) G–2 section maintained its own intelligence database and provided it to analysts studying attack trends along their routes. On a daily basis, the G–2 analysts manually sorted through the previous 24 hours of enemy activity reports provided by the Combined Information Network Data Exchange (CIDNE). The analysts read each report and copied into a Microsoft Excel worksheet only those reports with narratives that explicitly identified an MSR or ASR as the location of the attack. Then they manually added many useful layers of information to the worksheet for each of the selected entries.

Essentially, the 13th Sustainment Command G–2 section manually created its own sustainment-centric database from which sustainment-centric intelligence could be derived by subordinate command intelligence analysts. This investment of considerable manpower proved extremely valuable to intelligence analysts studying attack trends on routes. Intelligence analysts used this sustainment-centric database to empirically calculate

which lengths of their routes represented zones of statistically high historical enemy activity.

The process was not as complex as it sounds and represents a more accurate and evidence-based method than the classic circling of dots on a map to determine high-threat zones. As shown at left, if the rate of attacks between any two grid lines (east-west grid lines for generally north-south routes and north-south grid lines for generally east-west routes) exceeded a threshold representing a level of risk accepted by the commander, the analysts designated those grid lines as the boundaries of a threat zone. For example, the 264th CSSB commander set a threshold of two



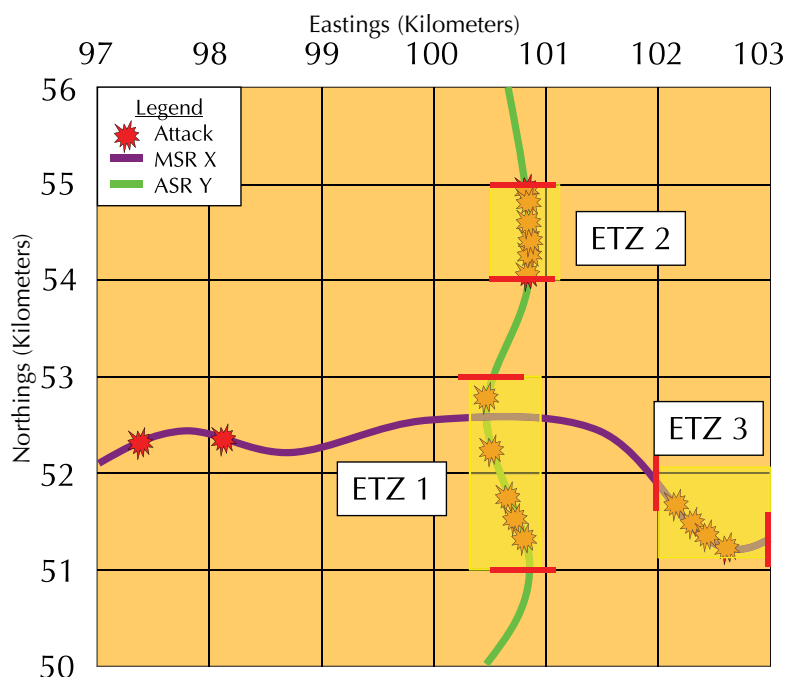
Intelligence analysts monitor enemy activity and identify elevated threat zones (ETZs) as those with activity in excess of a level set by the commander.

attacks per kilometer over a period of 8 weeks. The product consisted of a set of threat zones with boundaries falling on north-south grid lines for generally east-west routes or east-west grid lines for north-south routes, as illustrated below.

The decision to round the boundaries of the threat zones to kilometer grid lines made the intelligence products useful to the multitasking logistics convoy commanders, who were already busy tracking all the vehicles in their logistics convoys, communicating with higher headquarters, and scanning the road for IEDs. Having memorized just a few 2-digit eastings (east-bound route coordinates) and northings (north-bound route coordinates), the logistics convoy commanders knew exactly where to adjust their tactics, techniques, and procedures (TTP) simply by monitoring the military grid reference system (MGRS) output on their global positioning system (GPS) devices.

Elevated Threat Zones

The first inclination was to call these threat zones “named areas of interest” (NAIs), but it was later determined that the doctrinal definition of an NAI was essentially different than what had been created. Without a doctrinal term, the commander dubbed these sections of route “elevated threat zones,” or ETZs. This term had been coined by another unit to describe their “dots on a map” method, but it described our creation perfectly.



This chart shows the locations of the elevated threat zones (ETZs)—as identified by graphs like the one on page 15—along the main supply route (MSR) and alternate supply route (ASR).

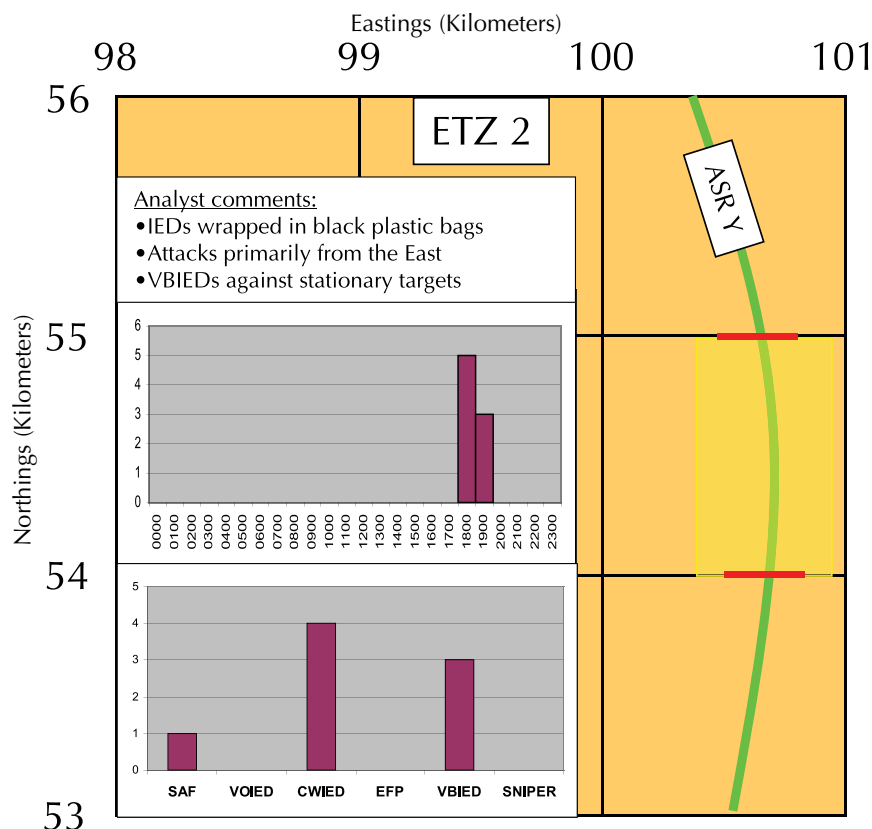
The analysts then zoomed in on each ETZ by filtering the entries of the sustainment-centric database for those attacks that occurred between the defining boundaries on the route of interest. What remained after the filter was a list of attacks that had occurred only in the defined zone of the route.

The analysts could then pursue trends through the layers of data for each entry provided by the 13th Sustainment Command’s G-2 analysts. For example, some ETZs exhibited day-of-week trends while some exhibited trends in IED initiator types. These trends changed over time, and of course, they changed from location to location as the routes cut through many diverse battlespaces—each with a unique enemy situation. Most ETZs exhibited a low variation in attack times, meaning that they had discernable “hot” times, although a few did not.

With these products, the 264th CSSB commander exercised his tactical counter-IED philosophy: “Avoid them and see them.” The commander’s staff planned convoy times around the hot times to avoid them. The next step was to see them.

The 264th CSSB fusion cell developed a three-pronged approach to the “see them” counter-IED philosophy. First, we ensured maximum vehicle lighting for night missions. Second, the fusion cell recommended slowing vehicular speed to aid in spotting IED indicators when passing through ETZs. Logistics convoys were monitored on the Blue Force Tracker to track their compliance with the mandated speed limits. Third, the intelligence analysts identified trends in IED indicators in each ETZ and developed appropriate counter-IED TTP with the operations section. Intelligence analysts disseminated trend analyses of all IED indicators. The location of the ETZs would be presented to the Soldiers during mission preparation and during missions. To make the statistics meaningful for the Soldiers, the analysts searched the battlespace owners’ explosive ordnance disposal report archives for pictures of typical IED attacks for each ETZ. This showed the Soldiers exactly what IED indicators to watch for, thus arming the Soldiers with the knowledge they needed to “see them” before they encountered them.

The result was a set of PowerPoint slides depicting a map of routes, overlaid with the ETZs represented as boxes and with boundaries falling on rounded kilometer grid lines. (See figure at left.) Subsequent slides showed each ETZ individually on a larger scale. Each ETZ slide presented graphs of the hourly attack frequency and attack type frequency as well as a verbal analysis of common attack trends not captured in the graphs, for example, “IEDs wrapped in black plastic bags.” (See figure above.) These slides were bound in trail books, which logistics convoy commanders signed out to study during the mission planning phase of their convoys. To make



Legend

ASR = Alternate supply route
 CWIED = Command-wire IED
 EFP = Explosively formed charge
 ETZ = Elevated threat zone
 IED = Improvised explosive device
 SAF = Small-arms fire
 VBIED = Vehicle borne improvised explosive device
 VOIED = Victim operated IED

This chart gives specific information about the attacks in ETZ 2 shown on the chart on page 16.

the information even easier for the Soldiers to access during the mission, the ETZ overlays were transferred to Blue Force Tracker overlays and electronically pushed to each vehicle before the mission. This final stage of dissemination provided real-time access to the intelligence analysts' empirical analyses of historical attack trends.

Regional Intelligence Provider

By staying focused on the routes and leaving the rest to the battlespace-owner's intelligence analysts, sustainment command intelligence analysts become the "wise men" of the roads. The intelligence section of any given sustainment command can use symbiotic relationships with its battlespace-owner counterparts as leverage points to transform from an under-resourced and over-tasked intelligence section to a regional route-intelligence provider.

This transformation requires the development of customized tools and a disciplined focus on the routes. The sustainment command intelligence analysts must resist pursuing other intelligence endeavors. Instead, they must rely on their battlespace-owner partners for other area analyses. In return, their partners can afford to focus on the intelligence requirements of maneuver missions and get their route intelligence from the regional route intelligence providers in sustainment commands. That is the art of being wise.

This article provides a general outline for doing more with less. The project here is to focus sustainment command intelligence analysts on what matters to logistics convoys and encourage a sharing relationship among all analysts in the intelligence community. The tools developed by the 13th Sustainment Command (Expeditionary) G-2 section were time consuming and were only temporary fixes. There remains a long-term need for top-down support for a theater-wide reporting system that meets the needs of both maneuver command intelligence analysts and sustainment command intelligence analysts. This would require a serious overhaul of the reporting system and an in-depth expert study that is far beyond the scope of this article. Such a transformation would certainly eliminate some of the many enemy activity reporting systems currently in use and pay huge dividends to the intelligence community. **ALOG**

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Logisticians Are Sustainers, Not Targeters

BY MAJOR DONALD A. MACCUISH

It is amazing how much terminology is appropriately and inappropriately used by Army personnel. This is particularly true for the sustainment community. Take convoys, for instance. While in Iraq, we called sustainment convoys “combat logistics patrols,” or CLPs. The Joint Readiness Training Center at Fort Polk, Louisiana, likes to use the term “combat logistics convoys,” or CLCs. (See Center for Army Lessons Learned [CALL] Handbook 08–23.) But wait. I find that neither of these terms is used in doctrine and that the term “logistics package” (LOGPAC) is the preferred term at the Battle Command Training Program.

The Army has always had situations like this. For instance, a few years ago maneuver units called logistics functions “man, arm, fix, and fuel.” At the same time, the sustainment community called the same functions “supply, field services, maintenance, transportation.”

The Sustainment Targeting Process

In May 2008, CALL published the Brigade Support Battalion Battle Staff TTP [tactics, techniques, and procedures] Handbook. Chapter 6 of that handbook is titled “The Sustainment Targeting Process.” The handbook makes some very good points that are highlighted time-and-again in CALL’s trend analyses. Sustainment units have a tough time synchronizing logistics across the brigade combat team (BCT) area of operations. This is a valid observation and should be a focus of collective training events. Where I take issue with the handbook is in the development of new terminology: sustainment targeting, sustainment targeting matrices, and sustainment targeting meeting. The underlying problem with creating this new terminology is that it misrepresents current Army terminology related to targeting.

Doctrinal Definitions of Targeting

Joint Publication 3–60, Joint Targeting, defines a target as “an entity or object considered for possible engagement or action.” Field Manual (FM) 6–20–10, Tactics, Techniques, and Procedures for the Targeting Process, describes targets as geographical areas, complexes, or installations planned for capture or destruction by military forces.

Doctrine goes on to describe the process of targeting. FM 6–20–10 describes the emphasis of targeting as identifying resources the enemy can least afford to lose or that provide him with the greatest advantage. Targeting focuses on attacking an enemy’s capability. Joint Publication 3–60 describes targeting as a method

of selecting and prioritizing targets, matching the appropriate response to them, integrating fires into the operations process, and creating desired effects necessary to achieve objectives.

The process of targeting helps integrate and synchronize fires with the other warfighting functions (including sustainment). However, synchronizing sustainment in the targeting process and describing the sustainment process as targeting are distinctly different.

Pitfalls of Using Targeting With Sustainment

Sustainment synchronization, unlike targeting, is designed to support friendly forces, not attack enemy capability. Both targeting and sustainment are part of the operations process, but they link into the operations process quite differently. For this reason, we should stick to existing sustainment terminology rather than misuse the doctrinal terms “target” and “targeting.” Likewise, we do not need to invent a new term by calling a synchronization meeting a “sustainment targeting meeting.”

I see three consequences of using the term targeting in the sustainment planning and synchronization process. First, “sustainment targeting” misuses the current doctrinal definition of targeting. If we misuse the terms associated with targeting to fit sustainment, we run the risk of misusing the original term when it is used in the context of lethal and nonlethal targeting. We also confuse other warfighting functions and joint and multinational partners by taking a task specifically designated in doctrine as a fires function and using it to describe how the sustainment function operates. Further, a doctrinal process already exists that does not take the current terminology out of context. As stated earlier, CALL trends show that the BCTs have a tough time synchronizing sustainment operations across their areas of operations. When sustainment organizations misuse a doctrinal term, it confuses a process that they already do not practice enough.

Second, by using the terms target and targeting beyond their intended use, we actually change the meanings of the words and weaken the understanding of their purpose. Two examples of the cause-and-effect of misunderstanding terms are “center of gravity analysis” and the prohibited term “effect-based operations.” Marines will use centers of gravity analysis at the tactical level; Army forces do not. When you put a Soldier and a Marine together, you get conflicting understanding of terms. The effect-based approach had

great application, but as the term became a “catch-all” for Army operations, the original concept lost its intended purpose. We no longer use the term because of its misuse. The same can be said for sustainment targeting. The sustainment synchronization process is tough, and we do not execute it with ease. We should work within the existing model of executing sustainment operations, rather than adapt the targeting model simply because it is the “flavor of the day.”

Over the past couple of years, we have seen increased efforts to define functions as targeting. Targeting should be left as targeting. If we define too many things as targeting, we run the danger of overusing the term and weakening its value inside the military decisionmaking and operations processes. We must keep the term “target” focused on the enemy. If sustainers start using “targeting” to describe the operations process, should the Army also use targeting to describe how it employs and synchronizes maneuver forces to accomplish a mission? For instance, in air assault operations, it would be a

Rather than change terminology, the sustainment community needs to focus on improving the process of logistics synchronization.

misuse of terminology to use “target” when planning an air movement plan or movement to the pickup zone. Do we allow the medical community to develop a targeting matrix for patient evacuation and medical care?

The third consequence is that by developing a sustainment targeting process, we run the inevitable risk of creating more of the same problem that we tried to solve by creating the term in the first place. The sustainment function is an essential element of the existing targeting process. The trend to separate lethal and nonlethal targeting runs contrary to the intent of targeting. The intent of targeting is to synchronize across functions, so developing a sustainment targeting process exacerbates the problem of synchronizing sustainment with traditional targeting.

Targeting Versus Sustainment

The decide, detect, deliver, and assess targeting process is designed to match the friendly force capabilities against enemy targets. Take, for instance, the decide function. In targeting, the first step is to provide the overall focus and set priorities for intelligence collection and attack planning. Unfortunately, we cannot engage every target on the battlefield. The many different types of targets exceed our capabilities to acquire and

attack them. We must determine which targets are most important to the enemy and which of those targets we must acquire and attack to accomplish our mission.

Sustainment personnel should not take this tactic because they cannot choose which of their units to support and which ones not to focus on. The focus of the sustainment planners during this time is to develop priorities of support to the BCT. The sustainment planner should focus on providing the commander a clear picture of priorities applied to selecting a friendly course of action. The intent of the “decide” function in targeting is to provide the commander with a clear picture of priorities applied to how to attack or with what capabilities to attack.

Let us consider “detect.” FM 5-0, Army Planning and Orders Production, describes the detect function as locating high-payoff targets for engagement. It is designed to acquire the targets selected in the decide phase. Detecting infers looking for something and finding it. Sustainment status is not something we are attempting to acquire or discover. We may need to identify, prepare, track, or determine shortfalls, but “detect” is a misrepresentation of the sustainment process.

Rather than using a model of targeting, I suggest we use models already in existence. We can modify these models to give them the flavor and pizzazz we want. For example, doctrine discusses four continuous, overlapping activities that occur throughout a military operation: plan, prepare, execute, and assess. Targeting fits under what doctrine calls “integrating processes,” and it is a critical component of the overall operations process. Using the targeting process for sustainment would be like using the risk management process to define sustainment operations.

As sustainers, we must be fully involved in the targeting process—the doctrinal targeting process. By incorporating the word “targeting” into a process to which it does not apply, we misuse current doctrinal terms, water down the understanding of what targeting is, and we run the risk of making targeting a catch-all phrase to the detriment of its original purpose in Army planning and operations. Rather than change terminology, the sustainment community needs to focus on improving the process of logistics synchronization. **ALOG**

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Over There: Army Expeditionary Forces Logistics in World War I

BY ALEXANDER F. BARNES

In the weeks that followed the Allies' victory in World War I on 11 November 1918, a U.S. Army quartermaster officer of the Services of Supply (SOS) sat down to write his portion of the after-action report. The report was neatly typed, thorough, and impressively honest. It outlined how, almost out of nothing, the Army had forged the SOS, the logistics organization that supported the 3 million Soldiers deployed "over there" to Europe as the American Expeditionary Forces (AEF).

Joining the Fight

In 1917, when the United States entered the war, the force structure for each infantry division included 4 infantry regiments, 3 artillery regiments, 4 machine-gun battalions, an engineer regiment, a signal battalion, and a number of other supporting units for a total of 25,484 Soldiers. (Serving in these divisions, either as volunteers or draftees, were such notable men as Buster Keaton, Walter Brennan, Conrad Hilton, Ty Cobb, future Supreme Court Justice Hugo Black, future President Harry Truman, boxer Gene Tunney, and future World War II leaders Douglas MacArthur, George Patton, Joseph Stillwell, George Marshall, Clifton Cates, and James Van Fleet.)

Joining the war involved intense logistics planning and execution. Just getting the units to France was a major accomplishment. German surface raider warships and U-boats were patrolling the Atlantic and had been devastating the shipping capabilities of England and France since 1914.

After arriving in France in 1917 with a small headquarters contingent, the AEF commander, General John J. Pershing, waged a continuous struggle against his French, British, and Italian counterparts who wanted to use the U.S. "doughboys" as replacements in their decimated armies.

Services of Supply doughboys stand in a Luxembourg street during the road march to Germany in 1918. After the armistice, Allied forces occupied Germany in a formal state of war until the Treaty of Versailles was signed on 28 June 1919.

Mindful of the terrible casualty rates of the European allies in their trench warfare, Pershing insisted that the U.S. Soldiers would serve and fight as an independent American force.

The constant negotiation with the British for shipping space led Pershing to compromise to the degree that he later assigned some doughboys to train and serve with the British Army, but always as complete infantry brigades. The urgency of getting troops to France and into the combat zone increased when Russia, undergoing the Communist Revolution, dropped out of the war, thereby freeing many German divisions to join their comrades in France and fight on the Western Front in the spring of 1918.

During the peak days of fighting for the AEF in the autumn of 1918, the SOS operated water ports, ran combat convoys, regulated rail lines, fed the force, fixed automotive and horse-drawn vehicles, maintained hospitals with 190,000 patients, and milled the lumber required to build the transient camps to house Soldiers, who were arriving from the United States at the rate of 10,000 a day. The SOS worked around the clock to provide support to 43 Army infantry divisions, a Marine Corps brigade that had been integrated directly into the Army's 2d Infantry Division, some other separate Army units equipped mainly with French weapons, some Army units equipped partially with British weapons, and a rapidly growing Army Air Service equipped with borrowed French and British airplanes.



Logistics Problems

In spite of all the great combat support and logistics feats they had accomplished, AEF logistics operations still had some dismal aspects. Early operations were plagued with shipping mistakes and confusion over cargo destination and delivery priority. Discussing the early operations, the after-action report said, "The most serious delays experienced were in the case of articles which would be classified as initial equipment, requisitions for which were submitted to G-1, Second Corps. In no case were these supplies ever received."

The problems did not end with the AEF's arrival in Europe. Of the Allied countries, France in particular was drained by 3 years of constant warfare, and a large portion of the country was either occupied by the German Army or devastated by the fighting in the trenches that stretched from the English Channel to Switzerland. With the largest portion of their workforce in military service, the French were struggling to provide food and shelter for their own soldiers, and although they were enthusiastic supporters of the AEF, they had little left to offer the Americans. Max Brakebill, a former Hollywood motion picture studio employee and California National Guardsman in the 144th Artillery Regiment, wrote home, "The women of France deserve a lot of credit. They work like men . . . If people in the States could see what France has put up with in the last 4 years they would know what war means."

The line of communication (LOC), while formed with good intentions, was the subject of some embarrassing episodes. In a memorandum to General Pershing's chief of staff dated 15 November 1917, Colonel Johnson Hagood reported—

I am informed a ship lay at one of our base ports in France for forty-two days waiting to be unloaded and costing the government in the neighborhood of ten thousand dollars a day . . . at one time ninety percent of all of the transportation of one American division had been borrowed from a French captain . . . Not only has the [LOC] failed, so far, to function properly in the supply of our own men but it has so clogged the French railway yards, storehouse and quays, in this section as to cause an official complaint to be made.

Equally embarrassing was the situation in one of the earliest units to deploy, the 42d Infantry Division, whose supplies were scattered across a 10-acre field, rendering much of it unserviceable or lost. Uniforms were in such short supply that some American Soldiers, particularly II Corps troops attached to the British Expeditionary Force, had to be issued British Army tunics complete with King's Crown brass buttons.

Not all of the AEF's problems concerned logistics or even the eastern side of the Atlantic. Colonel Hagood also reported on the Soldiers' lack of basic skills

training, saying that "there were men who had been in the Army four months and had never fired a rifle, had any gas instruction, or marched a mile with a pack; that many of them had spent their time on setting up exercises, learning the customs and courtesies of the service, singing and acquiring a knowledge of the court martial procedure."

Problems with transportation and vehicles continued to be a major concern. A brigade commander in the 26th Infantry Division reported, "With traffic cops on every corner of the training camps at home and thousands of cars and trucks in reserve, we were put to the mortification of having to borrow transportation from the British and the French to keep men from starving to death." The 33d Infantry Division commander noted sarcastically that while the streets of Washington, D.C., were filled with Army and civilian cars, his division did not have a single vehicle capable of driving more than 20 miles without breaking down. Some motorized divisional supply-train units were among the later-deployed units so that infantry battalions would have more shipping space.

Building the SOS

Realizing that the LOC was not working, Pershing decided he needed a "take charge" type of officer to reorganize the AEF's logistics support. Pershing handed over control to General James G. Harbord, his former chief of staff, who was serving as the commander of the 2d Infantry Division. Working on the framework of a six-infantry-division corps, with four fighting divisions and two divisions designated as base or depot divisions, Harbord set about creating the SOS to support it.

Infantry divisions arriving in France were stripped of Soldiers with backgrounds as plumbers, pipefitters, masons, carpenters, bricklayers, millwrights, wranglers, electricians, blacksmiths, and glaziers. Those Soldiers were sent to build and maintain the logistics bases. Robert Koehn, an Ohio doughboy in the 83d Infantry Division, wrote to his mother, "Working on a building for a barracks and office room . . . it is 100 ft wide and 400 ft long." And a few months later he wrote, "Dear Mother . . . this is Sunday an[d] a day off first day for 6 weeks . . . So we all went uptown to take a bath . . . first time I been to town for 2 months . . . got a big bunch of American tools in last week . . . Seems good to get hold of them kind of tools . . . Still making windows . . . That's all I have been doing since we came to this camp."

Similarly, because of his previous civilian railroad experience, Charles Etzweiler, a young doughboy from Red Lion, Pennsylvania, spent the war in a railroad regulating company despite his many attempts to get a transfer to the Tank Corps.

Becoming Effective and Efficient

Harbord set the pace by frequently traveling throughout the theater. He traveled by train and, for his personal transportation, always brought with him an automobile on a flatcar. He and his staff divided the AEF sector of France into “base sections” that each had a water port, “intermediate sections” for the storage of supplies and materiel, and an “advanced section” responsible for distributing supplies and parts directly to the combat divisions. As AEF infantry divisions went to the line, the supporting depots in the advanced section were responsible for documenting and loading the railcars that went to the division’s assigned railheads. From the railheads forward, each division was responsible for picking up the supplies and getting them to the appropriate units.

The statistics of the SOS’s work are impressive. The forestry units milled 200 million feet of lumber and cut 4 million railroad ties. One bakery produced 800,000 pounds of bread each day, SOS mechanics repaired 30,000 vehicles, and the advanced section depots maintained over 2 million square feet of covered storage space. By the time the armistice was signed in November 1918, there were 2,084,000 doughboys in France and 650,000 of them were assigned to the SOS.

In the meantime, Pershing was able to secure the services of a number of professional businessmen to assist in the acquisition, production, and distribution of badly needed resources. Everything the Army needed, from lumber to medicine, fresh vegetables, boots, and draft animals, was purchased and turned over to the SOS for distribution and management.

Lieutenant Jay Hormel used his background in the family meatpacking business to figure out that deboned frozen meats took up 40-percent less cargo space than very large cuts of meat still on the bone, which would free up valuable cargo space for other commodities. Hormel’s later development of Spam canned meat would have an equally significant effect on the American Soldiers of World War II.

Working with the British supply system proved to be an enlightening experience. While the American Soldiers did not care much for British food rations, an Army quartermaster reported—

We found that if we followed instructions, supplies were forthcoming. Not a requisition was sent to the base that was not properly acknowledged, with a statement as to the probability of supply. A wire was always received the day before the [rail] car so that preparations could be made to receive it. Carefully checked lists were always found in the cars, showing exactly what they contained, and shortages almost never occurred.

Post-Armistice Logistics

By the time the armistice ended the hostilities, 29 AEF infantry divisions were either in combat or moving

into the combat zone. In order to take over the AEF’s assigned 2,500-square-mile occupation zone in Germany, Pershing selected eight of his best divisions (four Regular Army, two Army National Guard, and two National Army), assigned them to the Third Army, and sent them through France and Luxembourg on a road march to their assigned sites in Germany. The movement of 250,000 doughboys into potentially hostile territory caused a wave of new problems for the SOS because these units quickly had to be brought up to a full complement of equipment, vehicles, and even horses.

Among the units now belonging to the Army of Occupation (which, through the Third Army’s lineage, is now the U.S. Army Central Command) were several of the divisions that had seen some of the hardest fighting in the final days of the war. Their pack and draft animals were in deplorable condition, so to make the move to their occupation zones, these units were given permission to draw animals from other divisions not making the move.

Soon most of the divisions were able to reach their assigned strength of 6,100 animals each, although the condition of many of the borrowed horses was not much of an improvement. One example of the perseverance and ingenuity of the American Soldiers occurred shortly after all the occupation forces were in place in December 1918. The Army Remount Service set up shop in Germany and did such a good job nursing the horses back to health that they actually created a surplus and ended up selling the excess animals to the local population.

A bigger problem troubling the AEF logisticians was how to support and maintain the forces once they arrived at their assigned occupation zone. Germany had been at war since 1914 and under blockade for much of that time. The German countryside had been stripped of anything that could produce food or be eaten, and the local population was close to starvation. Along with food, the occupying forces also required massive amounts of replacement boots, overcoats, blankets, linen, and other cold-weather gear to help them through the winter. Working with German officials and the owners of a local shoe factory, uniform factory, and steam laundry in the Coblenz-Lutzel area, the Third Army began operating a system of repairing salvaged clothing, shoes, boots, and equipment for reissue. Their output soon reached between 800 and 1,000 pairs of repaired shoes and boots a day.

In addition to supporting the occupation units deployed to Germany, the SOS was responsible for sending back home the other infantry divisions that were not going to remain in Europe. At the same time, the Spanish influenza epidemic was sweeping Europe. Sixty-two thousand doughboys died, while thousands of others were hospitalized in France undergoing



Two doughboys assigned to a Services of Supply transportation unit pose for a photograph.

convalescent treatment. Koehn reported to his mother in October 1918, “That Spanish Influenza has killed many of the boys an[d] a lot of the people over hear [sic] . . . quite a few died on the boat.” In the port of Brest, between September and November 1918, there were 1,817 burials of doughboys, many of whom died of influenza on the boat en route to France.

Yet, by mid-1919, the occupation of Germany was logistically sound, most of the AEF’s other doughboys were demobilizing back in the United States, and the SOS was able to close down many of its operations.

Lessons Learned

So, 90 years later, here are some lessons for today’s logisticians.

A bad beginning doesn’t mean a bad ending. The explosive growth from a 200,000-man army to a 3-million-man army in 2 years magnified the results of every bad decision and mistake. Deploying a force of that size across the Atlantic Ocean to a country that had been under constant attack for 3 years was a complex operation that no U.S. Army logistician had ever attempted. In the end, with adaptive, creative leadership and plain hard work, the AEF grew into a combat-effective army and prevailed against a skilled veteran enemy.

Nothing happens until something moves, but it still takes planning and human effort to make things move. The AEF’s recovery of materiel from the battlefield exemplifies the importance of planning and human effort. Salvage recovery became a watchword in the AEF during the Argonne campaign. Instructions were given that, unless wounded, each Soldier returning from the front would bring back some salvaged item. The division quartermaster of the 79th Infantry Division instructed that “it might be an empty cartridge case, or a pair of shoes, but no one was to return empty handed.” In effect, each Soldier became part of the solution. Similarly, all trucks and vehicles, including

kitchen carts, were used to carry salvage back from the front to preassigned salvage dumps, where it was sorted by salvage platoons and reissued if possible.

Knowing where things are is critical in getting them to the right location. In 1918, as in 2009, getting advance notice of what was in storage or en route gave logisticians the luxury of planning how to support the combat troops instead of scrambling to catch up to their needs. Without accurate inventory records and detailed packing lists, the materiel might as well have been on the moon for all the good it did the Soldier.

A well-organized, innovative, and responsive distribution system is a combat multiplier whose value cannot be over-estimated. There is no substitute for Soldiers who understand their jobs and perform them at a high level. Find your experts and use them without waiting for “enablers” to provide a magic bullet. The SOS spent a seemingly inordinate amount of time and effort in keeping the frontline troops supplied with footwear to protect them from exposure to the continuously cold and wet conditions in the trenches. It worked. As a result, the AEF suffered a lower percentage of trench foot than the U.S. Army did under similar conditions 25 years later in World War II and in the 1950s in Korea.

There will always be critics, but nothing succeeds like success. When asked to defend some of the “extravagant” spending practices of the AEF to a congressional committee in 1921, General Charles Dawes, later the 30th Vice President of the United States, replied in no uncertain terms, “It’s all right to say we bought too much . . . but we saved the civilizations of the World . . . we weren’t trying to keep a set of books. We were trying to win a war.”

When the division quartermaster for the 29th Infantry Division wrote his after-action report for the Battle of Saint Mihiel, he described in detail the struggles and ultimate success of one specific night convoy in which he traveled nearly impassible muddy roads under artillery and gas attack and endured miles-long traffic jams to get the required supplies to his units. He concluded with a simple statement and perhaps fitting tribute to all the doughboys of the SOS: “Where would the fighter be if not for the machinery that permitted him to keep fighting?”

ALOG

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Executing Offensive Logistics

BY LIEUTENANT COLONEL TODD A. HEUSSNER

The 168th Brigade Support Battalion trained its Soldiers to anticipate requirements, solve problems, take the initiative, and aggressively support the warfighter.

In the realm of military tactics, there really are only two options: offense and defense. It has been said many times that you can't win a defensive war and that defense should be used only until a force can resume offensive operations. In the logistics world, we often are guilty of not using tactical terms to define our operations. We should not only adopt tactical terms like "the offense" to describe our operations, but in executing those operations, we should go on the offensive.

Webster's Dictionary defines "offense" as "an attack or assault." As logisticians, we must be "assaulting" our supported units with every bit of capability that we have, leaving no Soldiers or equipment idle. We must employ all that we have to enable our maneuver teammates to pursue the enemy with success.

In the 168th Brigade Support Battalion (BSB), we developed a concept of offense as applied to logistics operations. Here is our definition of "offensive logistics": A fully integrated, aggressive, and proactive system of logistics support that anticipates requirements, synchronizes support, integrates deliberate logistics convoys with mission requirements, and improvises when standard support does not meet requirements.

The Offensive Logistics Mindset

Executing offensive logistics is as much a state of mind as a physical manifestation of logistics support. The offensive logistics mindset facilitates aggressive action by every member of the team, thereby eliminating reactive support and allowing logisticians to provide support more deliberately. By contrast, reactive support places our Soldiers at risk by reducing the time they can spend planning, preparing, and rehearsing before they execute an operation. In the absence of specific guidance, Soldiers trained in offensive logistics have a very clear understanding of what is expected of them and how they are to execute operations. Offensive logistics is the



Soldiers of the 168th Brigade Support Battalion perform precombat inspections before a logistics convoy. The battalion functioned as a combat sustainment support battalion, supporting more than 80,000 Soldiers in Multi-National Division-Baghdad.

commander's guidance captured in two words.

Executing offensive support allows the units we support to focus on the fight in front of them without being burdened by logistics concerns. All logisticians must work to push supplies, services, and support as far forward as possible to enable maneuver operations. Forcing a supported unit to come back to the supporting unit's location reduces forward momentum and slows offensive operations; this is because the supported unit's attention is divided between pursuing the enemy and seeking supply, maintenance, and distribution support, which typically is positioned away from the main effort of maneuver forces. Providing aggressive support means

effectively eliminating supply point distribution and providing services forward on the battlefield. Anticipating requirements and pushing assets forward maintains momentum, reduces supply and repair cycle time, and allows our teammates to pursue the enemy. An enemy who cannot rest will not last long on the battlefield.

To ensure that the 168th BSB continually executed offensively while deployed to Iraq, commanders and staff routinely provided examples of how their companies were executing offensive logistics. We focused on identifying what capabilities existed and how we were employing them and determining ways to move support closer to the supported units. Soldiers and leaders routinely discovered new ways to push support forward or employ resources more effectively. Finding new methods of employing assets and capabilities became an obsession that paid off in a number of exciting ways across the battlefield.

A BSB Acting as a CSSB

While the 168th is a BSB—organized, manned, and equipped to provide support to the 214th Fires Brigade—we were deployed to Iraq on an “in lieu of” mission as a combat sustainment support battalion (CSSB). While under the 1st Sustainment Brigade, our mission was to support the 80,000 Soldiers of Multi-National Division-Baghdad. As a CSSB, our battalion grew from a modification table of organization and equipment strength of 350 to nearly 1,000 Soldiers, organized into headquarters, supply and distribution, maintenance, transportation, convoy security, and force protection companies.

Each company executed offensive support in innovative ways. Soldiers seized upon the idea and discovered new and improved ways to execute their individual tasks at the locations of supported units. The results were inspirational and motivational, and the battalion quickly developed an offensive and aggressive culture that produced amazing results that were routinely recognized by senior leaders in theater.

Operations S-2 and S-3

Intelligence drives logistics operations, so an intimate knowledge of enemy tactics, techniques, and procedures, patterns, and engagement areas is absolutely critical to successfully accomplishing logistics missions and maintaining the safety and security of Soldiers. The BSB's S-2 recognized her critical function and went on the offense to gather, produce, analyze, and distribute intelligence products throughout the battlespace. Her aggressive collection and amazing ability to determine where the enemy would engage and by what means was quickly recognized by the intelligence community all the way up to the corps level. The S-2's offensive pursuit of intelligence routinely kept the battalion's logistics convoys out of enemy engagement areas during peak activity periods. Without a doubt, the S-2's work saved lives and



The noncommissioned officer-in-charge of the stock control section of A Company, 168th Brigade Support Battalion, performs location maintenance at the 168th Supply Support Activity. The battalion worked to ensure that inventory accuracy was maintained above Department of the Army standards.

helped maintain an uninterrupted flow of supplies to supported units.

The S-3 was responsible for executing distribution operations when planned missions entered the 48-hour lock-in window. In keeping with the battalion's offensive focus, the S-3 worked very hard to identify, coordinate, and synchronize external assets that could ensure the effective delivery of supplies and services throughout Baghdad. The S-3 synchronized our convoys to pass through engagement areas immediately after explosive ordnance disposal or route clearance assets cleared the area of improvised explosive devices (IEDs). He also worked very closely to tie our logistics operations to the operations of the battlespace owners to ensure that we traversed their terrain while they were executing patrols. Simultaneously, the S-3 worked with the electronic warfare officer to employ Air Force assets to jam frequencies and predetonate any IEDs along our routes.

The battalion staff executed logistics offensively to bring every available asset into the fight at a precise point on the ground at a specific time. The coordinated and synchronized effort of assets from several Army branches as well as the Air Force resulted in the completion of more than 3,500 logistics convoys covering more than 2.2 million miles with no effective enemy attacks, zero injuries, and no deaths. The entire battalion staff was committed to executing offensive logistics operations to ensure that our mission was accomplished while ensuring that our Soldiers were safe.

Support Operations

Support operations is the center of gravity for any logistics unit. While supporting combat operations, the

support operations (SPO) section executed offensive logistics in a number of innovative ways. However, the offensive nature of the battalion manifested itself in every section and touched every facet of our operations.

When we arrived in Iraq, the distribution management system consisted of paper copies of movement releases placed in binders and highlighted with different colors to differentiate movement priorities. The system was cumbersome and slow and required daily synchronization meetings with distribution managers across Iraq. To improve the system, our distribution section designed, developed, and implemented a transportation movement release (TMR) database that revolutionized distribution management at the brigade level. The database was shared across the brigade, giving every member of the distribution team, from company to brigade levels, perfect situational understanding of required movements, priorities, and backlogs. The TMR management system improved support, reduced transit times, and freed leaders to focus on less routine and more urgent requirements.

The supply management team in the SPO section executed offensive logistics by improving authorized stockage list management. Their relentless pursuit of repair parts and supplies reduced the requisition wait time from 19 days to 11 days, reduced zero balances from 12 percent to 3 percent, and improved the fill rate to 86 percent. The 168th Supply Support Activity (SSA) led the theater in nearly every supply performance metric as a result of the offensive execution of supply management functions.

Improvements in maintenance operations were equally as impressive as the gains made in the supply performance and distribution arenas. The maintenance managers executed offensively by identifying parts with long leadtimes, prioritizing difficult jobs, working with item managers and parts manufacturers to procure parts, and fabricating parts when required. They routinely managed nearly 2,000 jobs per month, with each job requiring less than 30 days to complete.

Working in concert, the distribution, supply, and maintenance managers executed offensive logistics that resulted in increased velocity, improved availability, and reduced cycle times, yielding world-class support for Soldiers in contact with the enemy. The brigade combat teams (BCTs) that we supported were the beneficiaries of our offensive logistics, receiving their supplies an average of 40-percent faster than before we began our efforts. The increased velocity improved supply availability, decreased repair cycle times, and allowed the BCTs to continue to pursue the enemy without interruption.

Company Execution of Offensive Logistics

Offensive logistics manifested itself in a number of ways at the company level as well. Soldiers transformed the SSA inside and out by reorganizing,

rebuilding, and providing first-class support to our supported units. On a near-daily basis, we received comments from our teammates about the responsive and professional attitudes of our Soldiers. Since they worked at one of the busiest warehouses in Iraq, it would be expected that our Soldiers would be tired and dispirited, but they were constantly motivated by the continuous improvement and fueled by the laudatory comments that they routinely received.

Our maintenance Soldiers developed a number of offensive programs that provided outstanding support to units. All of the sections in the maintenance company—communications and electronics equipment, small arms, air-conditioning and generator repair—developed mobile teams to assess and repair at unit locations equipment that normally does not receive the care and attention it deserves. If the equipment could not be repaired immediately, our Soldiers assisted the supported unit in submitting a work order for the equipment and moving it to our location for repair. In many cases, the owning unit or Soldiers didn't even know that their equipment required maintenance.

The distribution company started delivering supplies received at the SSA to supported units, eliminating supply point distribution for those who did not have the time, resources, or desire to pick them up. Many of these programs were started by Soldiers who understood what offensive logistics means: pushing support as far forward as possible, anticipating requirements, and reducing reactive support.

The impact of executing offensive logistics cannot be overstated. It is a concept that manifests itself physically and culturally, transforming logistics support across the organization. Offensive logistics permeated every section, platoon, company, and function of the 168th BSB. Soldiers knew intuitively to provide support aggressively without being told what to do or how to do it.

The power of nearly 1,000 Soldiers working in concert to accomplish a goal is truly inspiring. Once Soldiers understand that they are to solve problems, provide support, and continuously improve and innovate, what they can accomplish has no limit. The results of executing offensively speak volumes about the motivation, dedication, and professionalism of our Soldiers. The 168th Brigade Support Battalion knows how to "Make It Happen!"

ALOG

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Transformation of Finance Operations

BY MAJOR THOMAS A. BUCHHOLZ, CAPTAIN NICOLE M. WARD, AND STAFF SERGEANT JAMES R. BAKIE

With Army transformation, finance operations have become a sustainment function. When the 1st Sustainment Brigade deployed to Iraq in 2007, it was in the process of learning how best to provide financial support in a modular organization.

Faced with the challenge of transforming into an expeditionary, campaign-quality force, the Army replaced division support commands and other support brigades with sustainment brigades. For the logistician, this involved not only streamlining traditional systems for command and control, theater opening, and theater distribution but also integrating financial management operations as a new sustainment function. Within the sustainment brigade, a financial management support operations (FM SPO) section was added to the table of organization and equipment. This section was created to help the sustainment brigade command and control a financial management company (FMCO).

Finance Modularity

The financial management community transformed in order to adapt to Army modularity. Finance transformation was designed to help support and serve the Army and the Nation, provide modular, capabilities-based organizations, and increase the relevance and responsiveness of finance units to commanders. Financial management transformation eliminated finance commands, finance groups, and finance battalions. In their place, the Army created financial management centers (FMCs) that provide financial operations, theater policy, and technical oversight. The FMC is the theater link to financial management national providers such as the Defense Finance and Accounting Service (DFAS) and the Department of the Treasury.

The elimination of finance battalions resourced a total of 23 FMCOs (12 in the Active component) and 90 financial management detachments (33 in the Active component). FMCOs and financial management detachments have the same missions as the legacy finance structures, but provide greater disbursing capability at the detachment level and only limited military pay support because of the fielding of the Defense Integrated Military Human Resources System.

Predeployment Developments

The 1st Sustainment Brigade, formerly the 1st Infantry Division Support Command, was activated on 15 February 2007. Soon after the activation, we were notified of our deployment to Operation Iraqi Freedom (OIF) 07–09 to support Multi-National Division-Baghdad (MND–B). The 1st Sustainment Brigade was the second sustainment brigade to employ finance formations in combat operations.

The brigade commander decided to reorganize key staff positions for OIF 07–09. This decision was based on an earlier action that attached the 24th FMCO to the special troops battalion (STB) during its deployment. The logic was to give the STB commander the tools and resources needed to successfully provide command and control and technical oversight for financial management operations in his area of operations. Because of this reorganization, the FM SPO section was shifted from the brigade SPO section to the STB's as primary staff.

Planning and Preparation

Before deploying, the FM SPO established communication with several financial management units—the 24th FMCO at Fort Stewart, Georgia, the 13th Finance Group (deployed to Camp Arifjan, Kuwait), and the 336th FMC from Lake Charles, Louisiana—with the intent of building relationships with nonaligned units before the deployment. Relationship building was key to our successful integration in theater.

Our initial contact with a unit that was in theater was with the 13th Finance Group. We contacted the group to gather information, theater policies, and the finance support matrix for the theater of operations. We sought to develop a better understanding of the working relationship between FM SPO and the finance group. We also gleaned this type of information from the 336th FMC, which visited us at Fort Riley, Kansas, and briefed the 1st Infantry Division and 1st Sustainment

Brigade leaders on the financial management concept of support and modularity.

The 24th FMCO was task-organized under the 1st Sustainment Brigade for OIF 07–09. The FM SPO and the 24th FMCO discussed personnel and equipment issues and the company's predeployment training. The FM SPO began to integrate this information into STB training meetings, and a video teleconference was conducted to discuss current and future issues, working relationships between the FMCO and FM SPO, finance support in Iraq, and individual detachment strengths and locations.

The battalion commander, the FM SPO section, and the 24th FMCO commander and sergeant major went to Fort McCoy, Wisconsin, to observe Army Reserve finance predeployment training and to meet two Army Reserve detachments that would deploy with

Finance transformation was designed to help support and serve the Army and the Nation, provide modular, capabilities-based organizations, and increase relevance and responsiveness to commanders.

the 24th FMCO. The 336th FMC was still training at Fort McCoy, allowing the FM SPO section to meet its leaders and discuss theater finance policies, roles, responsibilities, and relationships. We also met the officer-in-charge of the Army Reserve finance training at Fort McCoy and his staff to discuss the training and tasks that all Reserve finance units must conduct before deploying. The visit also allowed us to meet the two detachment commanders who would be attached to the 24th FMCO in Iraq. We based our discussions on their training, Soldier and equipment strength, and the future concept of support to operations in Iraq.

The FM SPO section also initiated communication with the 15th Finance Battalion in Iraq to learn about reporting procedures and requirements, customer service workload, locations of detachments and their finance support teams' missions, the financial impact of the surge, guidance for the FM SPO section, and the transition process between the 15th Finance Battalion and the 24th FMCO.

Understanding Roles and Responsibilities

The 1st Sustainment Brigade deployed to Iraq with a finance battalion instead of a FMCO. This allowed the FM SPO within the STB to develop its internal standing operating procedures (SOPs), identify its roles and responsibilities, and learn everything it could from the

finance battalion before the FMCO arrived. The FM SPO section quickly learned and understood the unique finance focuses, such as the merged accountability funds report, analysis of unmatched transactions, and assignment incentive pay. We also began to learn how finance operations work in a deployed environment.

Functions of the FM SPO Section

By the time the FMCO arrived, the FM SPO section was operational and understood its tasks, roles, and responsibilities. We took the functions of an FM SPO found in Field Manual 1–06, Financial Management Operations, and used them as a guide to create the specific tasks the section would conduct. We noted that, in the sustainment community, receiving timely and relevant data is important. In the finance community, that translates to tracking all Soldier and commander support statistics, including casual pay, check cashing, EagleCash card activity, paying-agent funding, and commercial vendor service payments.

These statistics quickly turned into tasks. The FM SPO section had to—

- Monitor and compile finance data through Diamond 2 reports.
- Develop trend and review-and-analysis briefs monthly.
- Monitor software and equipment—kiosks, the deployable disbursing system, paperless check conversion, point-of-sale devices, vaults, and cash counters.
- Plan finance support to respond to changes in the theater. As maneuver brigades shift throughout the battlefield, they can request finance support at remote combat outposts.
- Ensure that the brigade plans and coordinates with the brigade SPO and S–3.
- Resolve FMCO issues. This task became necessary when the FM SPO section began supporting the FMCO. Each task had associated subtasks, and over time, we saw them changing as other priorities changed. These tasks were merely what we identified as our priorities during the first 5 months in Iraq.

Relationships

When we arrived in theater, the FM SPO quickly coordinated with outside agencies and units. These included the 316th FM SPO section (the 1st Sustainment Brigade FM SPO's higher headquarters); 336th FMC; 3d, 7th, and 640th Sustainment Brigade FM SPOs; 1st Sustainment Brigade staff (specifically the brigade SPO section); and 24th FMCO.

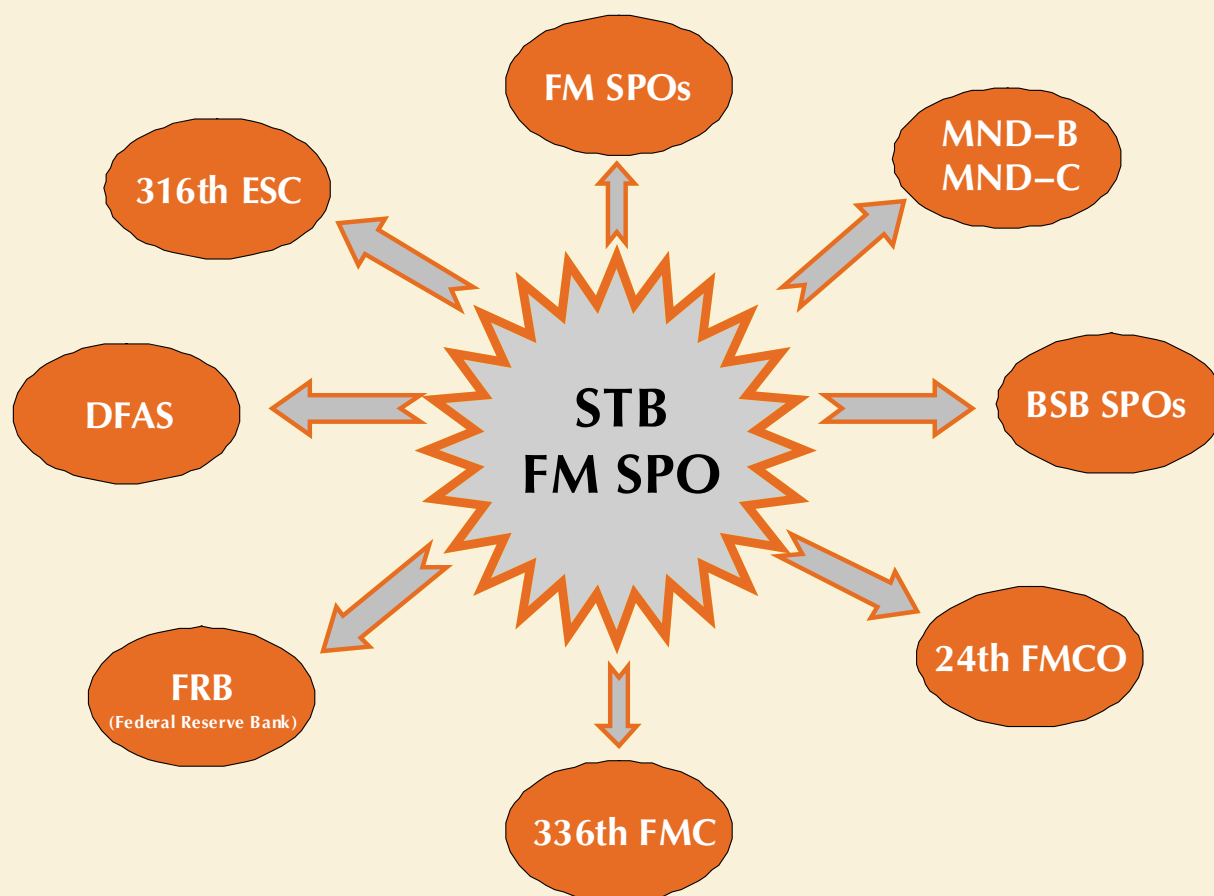
The FM SPO section communicated daily with the 336th FMC for policy and technical guidance. The 336th FMC served as the higher finance unit. Although it was not a command, the 336th FMC served as the financial management adviser for the theater.

It provided technical oversight and coordinated with national providers, such as DFAS, the Department of the Treasury, and the U.S. Army Finance Command (USAFINCOM). The 336th FMC was responsible for sending daily technical finance reports, chairing weekly technical update meetings, and publishing finance directives and policies to FM SPOs. The 336th FMC also served as the theater program manager for Federal Reserve System programs, EagleCash cards, and paperless check conversion.

DFAS, USAFINCOM, the Federal Reserve System, and the Department of the Treasury were important

assets and force multipliers for us. They served as our technical experts and program managers and were a source for historical information. They were always responsive to our questions and concerns about operations and procedures. We communicated with all of the agencies regularly in either monthly or bimonthly teleconferences that served as a forum for us to convey our concerns.

In addition to our teleconferences with outside agencies, representatives from DFAS and the Treasury Department visited Iraq to provide assistance and implement new software. DFAS sent a Corporate Electronic



Legend

BSB	= Brigade support battalion
DFAS	= Defense Finance and Accounting Service
ESC	= Expeditionary sustainment command
FM	= Financial management
FMC	= Financial management center
FMCO	= Financial management company
MND-B	= Multi-National Division-Baghdad
MND-C	= Multi-National Division-Central
SPO	= Support operations office
STB	= Sustainment brigade

This diagram shows all of the agencies that the financial management support operations section works with or coordinates with on a regular basis.

Functions of a Financial Management Support Operations Section

- Integrate all financial management (FM) within the area of operations.
- Plan employment of FM units.
- Synchronize division of FM networks.
- Manage all FM systems.
- Coordinate FM requirements.
- Coordinate operations and strategic FM support.

—Field Manual 1-06,
Financial Management Operations

Document Management System (CEDMS) team to set up a web-based CEDMS application and a central repository for permanent storage of documents. CEDMS provides online access to disbursing vouchers and supporting documents to reduce the risk of lost documents and the time needed to access supporting documents for research and audits and work problem disbursements.

Another helpful visit was conducted by the EagleCash card team, which provided retraining to finance, postal, and exchange workers on end-user equipment relating to the EagleCash program.

The FM SPO section collaborated with other FM SPOs from the 3d, 7th, and 640th Sustainment Brigades. We shared ideas and SOPs and worked together to resolve finance issues as a group. We resolved cross-boundary finance support concerns before they became 316th Expeditionary Sustainment Command (ESC) issues. An example of coordination among all the FM SPOs occurred in December 2007, when the 336th FMC hosted a planning conference to realign finance support boundaries and missions throughout Iraq. After the 2-day planning conference, the FM SPOs briefed their FMCO, battalion, and brigade commanders on the draft courses of action (COAs). Each commander provided his input to his FM SPO, and the finance community reconvened via Breeze (Adobe Acrobat Connect Pro Web-conferencing software). The changes were briefed, agreed on, and merged, resulting in an approved COA. The 316th ESC published a fragmentary order directing the sustainment brigades to execute the boundary shifts and mission changes.

Although the FM SPO section was located at the battalion level, we were closely linked with the brigade SPO. We participated in the brigade SPO weekly collaborative sessions (a forum with all of the subordinate brigade support battalion SPOs), coordinated

and integrated our plans with the brigade SPO plans section, and participated in brigade operational planning groups. The brigade served as our link to future support requirements and operational plans for Iraq.

Rules, Tools, and Procedures

The FM SPO section improved the reporting system by implementing the Diamond 2 report from the 336th FMC. This report was a consolidation of all finance data from the detachments and the FMCO. The type of data collected included customers served,

casual pay, checks cashed, EagleCash card activity, paying agent activity, Commander's Emergency Response Program payment, and commercial vendor service activity. With these data, we were able to brief accurate review-and-analysis and trend information to the 1st Sustainment Brigade commander. Some key information collected included customer numbers for disbursing, paying agents, commercial vendor services, and military pay.

The automation tracker was used by tracking automation that belonged to the Federal Reserve System. The type of equipment tracked included kiosks, point-of-sale devices, paperless check conversion, and EagleCash cards. This ensured that the automation equipment was repaired or replaced as needed. Ensuring that the right equipment was at the right location was mission essential.

In an effort to track the more than 700 paying agents that supported the commanders on the battlefield, the FM SPO developed a paying-agent tracker. The system tracked paying agents by unit, assigned location, and fund-clearing status. This helped ensure that we knew who our customers were and how we could help them. It also helped us plan for future missions and the placement of financial management support.

We tracked our forward operating bases, combat outposts, joint security stations, and patrol bases by which financial management detachments directly supported them, what units were being supported, and population size. As the number of units in theater increased, we used this information to adjust where support was needed.

Financial Management Briefings

The development of our trackers and consistent monitoring of financial data evolved into the development of numerous finance briefs. The FM SPO

The FM SPO section also initiated communication with the 15th Finance Battalion in Iraq to learn about reporting procedures and requirements, customer service workload, locations of detachments and their finance support teams' missions, the financial impact of the surge, guidance for the FM SPO section, and the transition process between the 15th Finance Battalion and the 24th FMCO.

prepared many financial management information papers for higher-level discussions and meetings. The FM SPO section attended monthly collaborative G-1 meetings for MND-B and Multi-National Division-Central (MND-C) and completed mission analyses and COA analyses for both MND-B and MND-C.

We developed monthly trends briefings that were shared among the brigade leaders to identify how to sustain and improve finance operations. The trends briefings covered vendor payments, EagleCash card loads versus cashier disbursements, paying agent support, and Soldier support disbursement.

In synchronization with the brigade SPO, we also developed a review-and-analysis briefing that showed all of the FMCO's technical statistics. The briefing covered the case management system, merged accountability funds report, analysis of unmatched transactions, the military pay accuracy rate, and Soldier support disbursements. This allowed the 1st Sustainment Brigade, STB, and FMCO commanders to see the macro-to-micro view of financial management support in our area of operations.

Challenges of Modularity

The financial management community has faced some challenges during the modularity conversion, the biggest being the transformation of financial management battalions to companies. This shift put FMCOs under the command and control of STBs. Reorganizing the financial management unit into a company has had some negative impacts on how the company is perceived and how assets, such as housing and workspace, are allocated. The STB has been very careful not to remove power from the detachment commanders and has even aligned their rating scheme with that of all other company-level commanders, having the FMCO commander as their rater, the battalion commander as their intermediate rater, and the 1st Sustainment Brigade commander as their senior rater.

It was an educational process for both the sustainment community and the financial management community to understand each others' technical requirements and methods of thinking. The sustainment community did not understand financial

management processes, regulations, and business rules, and the financial management units learned how the logistics community is a numbers-based organization that uses statistical data to analyze workflow, workload capacity, customer service satisfaction, and proficiency. The FM SPO and the subordinate financial management units learned to analyze the data and use them to improve processes and procedures.

The 1st Sustainment Brigade's STB and FM SPO have embraced financial management modularity. We see the potential in applying modularity to the financial management structure throughout Iraq. Finance Soldiers are no longer administrative overhead; they are now increasingly critical warfighting enablers and should be considered as such by all. Finance functions are now in the fight, with a tighter link to operational and support planning in conjunction with the battlespace management that the sustainment brigade provides. The sustainment brigade and the FM SPO have only begun to scratch the surface on exploiting the opportunities for the positive synergy that merging financial management into the sustainment community provides.

ALOG

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The Critical Role of Shower, Laundry, and Clothing Repair Teams

BY CAPTAIN JAMES C. MACHADO

As missions in Operation Iraqi Freedom (OIF) have changed over the past 6 years, so have the logistics requirements. During the initial entry phase and the first 2 years of the war, shower, laundry, and clothing repair (SLCR) teams were the only means of providing Soldiers with adequately cleaned laundry and a respectable shower. If they were not fortunate enough to receive the field services that SLCR

(pronounced “slicker”) teams provide, Soldiers were forced to fabricate their own showers and wash their clothing by hand.

SLCR Teams in OIF

By the summer of 2005, the OIF theater of operations had matured, and most Soldiers resided on large bases like Logistics Support Area Anaconda and



Victory Base Complex (VBC) or substantial forward operating bases (FOBs) that contracted laundry and shower services to support their populations. By the end of 2005, most SLCR teams found themselves without purpose because of the abundance of contractors. SLCR team members took on “in lieu of” missions, including convoy security and escort duties and base force-protection missions.

But in late 2006, the lack of security in Iraq became intolerable. Escalating violence was threatening the long-term success of democracy in the country. So President George W. Bush appointed leaders with fresh ideas and a comprehensive understanding of counterinsurgency operations. Those new leaders decided to use a new tactic: placing Soldiers in patrol bases (PBs) and combat

A laundry advanced system is unveiled and prepared for operation at Combat Outpost War Eagle in support of the 64th Special Troops Battalion. Shower and laundry operations were functioning within 48 hours of the team's arrival.



outposts that were embedded in communities throughout Iraq, far from the comforts of well-established bases. Shower and laundry services were once again in high demand to support these remote PBs and combat outposts, and SLCR Soldiers began using their military occupational specialty again.

When outposts are fortunate enough to have a SLCR team, the units enjoy a significant combat multiplier. The teams provide a service that gives Soldiers not only clean clothes to wear, but also a way to wash off sweat and dirt at the end of a hard day of patrolling. This capability enables Soldiers to enjoy their free time, not spend it washing clothes by hand or carrying clothes to the nearest FOB for contracted laundry support. SLCR teams allow combat units to focus on combat missions rather than trying to solve simple logistics problems. Another benefit of a SLCR team is their ability to repair ripped and torn uniforms. Patrolling Soldiers often damage their uniforms while executing their duties, but with a SLCR team on site to mend these deficiencies, they should always have usable uniforms available.

In late July 2007, in the midst of new and improved counterinsurgency operations, the 1st Platoon, 549th Quartermaster Company, 68th Combat Sustainment Support Battalion (which was under the administrative control of the 1st Sustainment Brigade), deployed with over 40 Soldiers who were eager to begin their mission of providing field services for forward-deployed outposts and bases in Iraq. The platoon's SLCR teams met the laundry needs of one FOB, one PB, and one combat outpost with over 1,900 Soldiers. The platoon also operated the only Soldier-run renovation shop in Iraq at VBC.

Team 1

When the 1st Platoon arrived in Iraq, it immediately sent a SLCR team to FOB Iskandariyah to support the 3d Battalion, 7th Infantry Regiment. That SLCR team, “Team 1,” provided laundry and minor clothing repair services to over 750 Soldiers, civilians, and some third-country nationals who worked on the FOB. Soldiers enjoyed a less than 24-hour turnaround on their laundry during regular operations, but the laundry advanced system (LADS) facility personnel also accommodated Soldiers if they returned from patrols or convoys during off-hours and needed immediate laundry service. This practice gave Soldiers who spent only one night a week on the FOB the ability to leave the FOB and continue on their missions with clean clothes in hand. Team 1 processed an average of 300 bundles of clothing each day for the 3d Battalion and regularly repaired torn uniforms for the Soldiers at FOB Iskandariyah.



A Soldier repairs a uniform to return it to service. Renovation services were free of charge for any Soldier and usually were completed in less than 24 hours.

team established operating hours to coincide with returning patrols so troops could clean off the sweat and dirt of the mission immediately. Team 2 provided services that not only kept Soldiers off the roads but also improved their morale with freshly laundered clothes and daily showers.

Other 1st Platoon Missions

A few Soldiers from the 1st Platoon remained at VBC and operated the Stagecoach Renovation Shop, where they repaired clothing and sewed

Team 2

Beginning in November 2007, another group of 1st Platoon Soldiers, "Team 2," was tasked to provide shower and laundry support to the 1st Battalion, 30th Infantry Regiment, at PB Murray and also to some units at the surrounding PBs. Before Team 2's arrival at PB Murray, the infantry Soldiers had to take their clothes to FOB Falcon, which was 30 to 45 minutes away. The Soldiers sometimes waited 2 or 3 weeks before they could get to Falcon to have their clothes laundered, and they also had to return to pick up their completed laundry a few days later. This risked Soldiers' lives by forcing them to be on the roads unnecessarily.

Before the 1st Platoon's arrival, the units at PB Murray and the other surrounding PBs took cold showers with bottles of water or engineered makeshift shower sites with privately owned Sun Shower bags. PB Murray had established gravity flow showers, but the water was heated by sunlight, so the Soldiers took cold showers in the winter months.

To make life easier on the 1st Battalion, Team 2 arrived at PB Murray with 2 shower tents that provided an average of 150 showers per day and a LADS, which allowed the team to complete laundry in less than 24 hours. Such turnaround times were ideal because the Soldiers sometimes spent more than 16 hours on convoys and patrols and often returned to the PB for less than 24 hours.

To the Soldiers' delight, the water in the field showers was heated to the perfect temperature, and the SLCR

patches onto the uniforms of not only Soldiers but also Marines, Sailors, and Airmen. Within the limitations of their sewing machines, shop personnel fabricated simple textile items like rifle covers, weapon slings, modified reflective belts, and makeshift harnesses. The Stagecoach Renovation Shop repaired or patched the uniforms of several high-profile Soldiers, including General David Petraeus and Sergeant Major Marvin Hill, who were the Multi-National Forces-Iraq commanding general and command sergeant major.

The 1st Platoon maintained a command and control element at VBC, but the platoon leader and platoon sergeant spent much of their time traveling to each SLCR site to check on their troops and ensure their equipment readiness remained at the highest level possible. The 1st Platoon also had two mechanics who remained at VBC to repair broken equipment that came back from the outlying sites for direct-support repairs. They often caught flights to outlying sites to take high-priority parts to the teams and conduct organizational maintenance, which reduced maintenance problems and long-term deadlines on the LADS, generators, and water boilers.

The 1st Platoon took on one last mission to support about 800 Soldiers in the Multi-National Division-Baghdad area of operations in March 2008. "Team 3" established the third SLCR site of their tour at Combat Outpost War Eagle. The site was built from excess plywood on the post, and the Soldiers erected the building within 48 hours of arrival.



Soldiers from Team 3 at Combat Outpost War Eagle begin operations in the partially constructed building during the first 24 hours in theater.

Equipment

Many SLCR customers wanted to know what a LADS is and how it works. A LADS is a 40-foot-long mobile laundry trailer that is easily hauled by an M1088 tractor and M871 trailer from location to location. The system can be set up and operational within hours. LADS is now completely computerized, making it easier to operate for even the most inexperienced SLCR Soldiers.

While many household detergents contaminate water and produce what is commonly known as “gray water,” LADS uses only environmentally friendly cleaning agents. Generally, the clothes put into the LADS are washed in a mild detergent solution (procured from the Army supply system) with an added antifoam chemical. The components of the detergent break apart and disintegrate into the environment without causing chemical damage to soil, so the laundry water does not require waste-water disposal. By using these nonhazardous chemicals, LADS can be set up anywhere clean (not necessarily potable) water is readily available, allowing SLCR teams to deploy with any unit.

Shower equipment in a SLCR operation normally includes one tent with a 12-head private shower stall setup. On camps or outposts with both men and women, hours of operation are gender-specific to ensure adequate privacy, but the hours always accommodate the operating tempo of each specific customer unit. A shower tent has one small generator to power the boilers

that heat the water and to pump water to and from the tent. SLCR Soldiers are responsible for ensuring that the water is the proper temperature and that the showers are kept clean and sanitary. They also take special care to maintain the often overworked equipment, making certain it is kept in proper working order and supplied with fuel and water as needed.

Soldiers of the 1st Platoon received several certificates of achievement, Army Achievement Medals, and coins from their supported units in appreciation for their hard work and dedication to their fellow Soldiers deployed in support of OIF. The 1st Platoon successfully redeployed from Iraq in October 2008 and rejoined the 68th Combat Sustainment Support Battalion at Fort Carson, Colorado, where they currently continue to train for future SLCR operations. **ALOG**

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Technology and Daily Management Help CRSPs Move Cargo

BY CHIEF WARRANT OFFICER (W-2) NADINE S. JOHNSON

The author lays out the tools used by the 1st Sustainment Brigade central receiving and shipping point to manage and move cargo throughout Iraq.

Central receiving and shipping point (CRSP) operations provide checks and balances for managing mass cargo flowing into the Operation Iraqi Freedom (OIF) theater. On a daily basis, the 1st Sustainment Brigade CRSPs managed these operations for the brigade during its OIF 07-09 deployment.

Cargo has been moving faster and more efficiently into the Iraqi theater of operations since the brigade implemented a new Microsoft Access database that links the Victory Base Complex and Camp Taji CRSP databases with battalion- and brigade-level transportation movement release (TMR) databases. This integrated database, developed by personnel from the 168th Brigade Support Battalion and the 192d Quartermaster Company, laid the groundwork for improvements in the daily transportation management of the CRSPs.

TMR Database Management

Daily operations included a battalion-level review of all cargo in the CRSPs against the TMRs assigned to it. The brigade TMR manager imported all assigned battalion-level TMRs into the CRSP database. He ensured that the TMRs were assigned to the correct mode operator. (The mode operator is the battalion assigned to move the equipment.) The TMR manager then monitored the daily status for completion to ensure delivery of the cargo by the required delivery date (RDD) or no later than 9 days after the RDD.

The TMR database was implemented in October 2007, and by February 2008, the 1 to 9 day past RDD rate had been reduced from 21 percent to 5 percent.

Movement Planning

Since most of the cargo that the brigade transported transited the CRSPs, managing the CRSPs was imperative to cargo visibility.

Daily checks of assigned TMRs against the cargo in the CRSPs facilitated movement planning. Accurate entries in the CRSP databases ensured that the correct number of trucks was allocated to move cargo to its final destination. The CRSP personnel and mode operators doublechecked the items listed on a TMR against the cargo actually in the CRSPs. If discrepancies were found, they were fixed with the help of the 199th Movement Control Team (MCT) at Victory Base Complex or the 528th MCT at Camp

Daily Cargo Screening Checklist

- ✓ Ensure cargo entries are correct and standardized in the database.
- ✓ Check for cargo on hand for over 10 days.
- ✓ Separate 1st Sustainment Brigade cargo from other cargo.
- ✓ Check for discrepancies in numbers or odd TMRs.
- ✓ Communicate with CRSPs and battalions regarding shipping dates.
- ✓ Communicate with MCTs on local discrepancies.
- ✓ Communicate with MCTs on theater cargo discrepancies.
- ✓ Pay special attention to deployment and redeployment cargo.

Legend

CRSP = Central receiving and shipping point
MCT = Movement control team
TMR = Transportation movement release

This checklist was used by managers of 1st Sustainment Brigade central receiving and shipping points to measure the progress of cargo being moved.

Taji, which were colocated with the brigade and the CRSPs. The initiative to colocate the MCTs improved the flow of cargo. The MCTs were the honest brokers used to enforce load lists, fix TMR discrepancies, and provide visibility of incoming and outgoing cargo.

Daily Cargo Screening

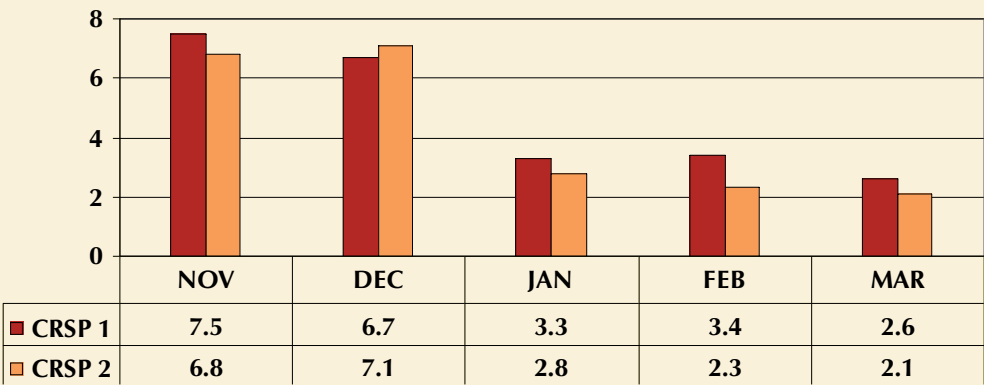
The checklist at left was a guide that the managers of the 1st Sustainment Brigade CRSPs used to accomplish the daily screening of the cargo. This checklist was essential in finding discrepancies and providing the brigade with a good snapshot of how the CRSPs and the battalion mode operators performed. The battalion mode operators had to meet two challenges: They had to deliver cargo before the RDD, and they had to keep the time a piece of cargo spent in the CRSPs as short as possible. Balancing these requirements was an art that ensured the earliest possible delivery time to the customer. Over the last months of their deployment, the 1st Sustainment Brigade and its battalions perfected this art.

The CRSP Scrub

The brigade CRSP manager ensured that entries in the CRSP databases were standardized for export and import to the TMR databases used by the battalions and the brigade. The 1st Sustainment Brigade conducted CRSP “scrubs” at least twice a week to doublecheck the accuracy of current onhand cargo, destinations, mode managers, and estimated ship dates (ESDs). The meeting also provided a forum for the brigade CRSP manager, the battalion transportation section, the MCTs, and the CRSPs’ staffs to discuss any new trends and developments. The brigade CRSP manager facilitated external coordination with the other brigade-level mode managers in Iraq.

Improved Practices, Improved Service

Knowing which piece of cargo was assigned to each mode manager helped to coordinate the movement of any cargo left at the CRSPs for over 10 days. After the implementation of the above management practices and the establishment of success metrics in December 2007, the CRSPs were able to reduce the percentage of 1st Sustainment Brigade cargo on hand longer than 10 days from over 10 percent to 1 percent. Not only was the backlog cleared, but the time that pieces of



The number of days cargo spent in transit through the 1st Sustainment Brigade CRSPs dropped significantly from November 2007 to March 2008 because of improved management practices and success metrics.

cargo spent at the CRSPs was also reduced. (See chart above.) In November 2007, the average time a piece of cargo assigned to the 1st Sustainment Brigade was in transit in the CRSP was more than 7 days by March 2008, the average time was only 2.4 days.

The CRSP should be recognized as an important node in the transportation system, one that requires daily supervision and implementation of management tools. Both 1st Sustainment Brigade CRSPs processed over 49,000 pieces of cargo over a 5-month period. Human error is found in any organization, and developing tactics, techniques, and procedures to counteract this tendency helped greatly in daily transportation management and made a positive impact on the support the 1st Sustainment Brigade provided to the warfighter.

Daily management also revealed negative trends, such as incorrect labeling of cargo and generic destination points of contact on TMRs. Recognizing these trends and addressing them to the correct agency was extremely important—especially at the VBC CRSP, which was often used as the dividing point for TMRs for cargo within the Iraqi theater of operations. Proper action taken on those negative trends set up the entire theater for success and reduced doublehandling of cargo and customer wait time for all supported units in Iraq.

ALOG

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The 1st Sustainment Brigade's Contract Coordination Cell

BY MAJOR JOHN R. CAUDILL

Contracting for support has become a fact of life on the battlefield. But many Soldiers and leaders do not have their first experience with contracting until they arrive in theater. The 1st Sustainment Brigade found that changes in organization and training are needed to meet the challenges of contracting.

Iraq has matured into a complex theater for support operations. Most operations involve some level of contracted support, whether for maintenance services, line-haul of critical classes of supply, force protection services, bottled water production, or warehouse management. The operational environment changes rapidly, and combat operations are planned and executed in more flexible and rapid processes than in the past. The planning and execution of support operations, including contracted support, must also be flexible and responsive.

Contract processes are complex, not uniform, and the personnel involved are constantly rotating in and out of theater. In the contemporary operational environment, many contracting mechanisms, multiple contracting officers, varying degrees of contract oversight, and numerous commercial companies are involved in supporting our forces.

The experience of the 1st Sustainment Brigade in Iraq demonstrates that the complexity of contracting in the contemporary operational environment and under the modular force structure requires modifications to the sustainment brigade's organization and to Army institutional leader development. I believe the contract coordination cell established by the 1st Sustainment Brigade to mitigate the risks associated with the complex contracting environment in Iraq should be considered for Army-wide adoption.

The Contracting Environment in Iraq

Army logisticians must have synthesized contract planning, administration, change, and implementation mechanisms and processes. Their contracts can range from Logistics Civil Augmentation Program (LOGCAP) contracts to Joint Contracting Command-Iraq/Afghanistan contracts (whether theater-wide indefinite delivery/indefinite quantity contracts or local contracts administered by regional contracting centers) to continental United States (CONUS) program manager support contracts. Each of these contract vehicles can have

multiple contracting officers (KOs) or, in the case of LOGCAP, administrative contracting officers (ACOs). Each contracting mechanism has different levels of involvement by the Defense Contract Management Agency (DCMA) in contract oversight and auditing.

In the case of LOGCAP, an Army Materiel Command (AMC) LOGCAP support unit (an Army Reserve unit) assigns regional specialists to assist in crafting and processing changes to contracts. The companies involved in support operations range from international giants to regional companies to local vendors. Each of these companies has its own list of managers, deputies, analysts, and supervisors, who rotate just like their military counterparts and make it difficult to keep contractor rosters current.

Each contracted effort involved in support operations must have a contracting officer's representative (COR) from the military unit responsible for the contracted function. The COR evaluates the contractor's performance, ensures that the contractor is in compliance with the requirements of the contract, and serves as a technical representative and liaison among the customer unit, the contractor, and the KO to communicate changes or the need for changes in the contract. In Iraq today, it is not uncommon for a sustainment brigade to have as many as 40 to 50 CORs.

Adapting to the Challenges of Contracting

Contracted support must be planned, just like military support, to ensure timely and effective support to operations. Guidance must be given to, and feedback received from, contractors, just as Army commanders give guidance to and expect feedback (in the form of reports) from units. The major challenge of contract support planning and execution is the training (or lack of training) of military planners at all levels and their experience (or lack of experience) with the planning and execution processes and the channels for implementing contractual changes.

Many Soldiers and leaders encounter contract planning and administration for the first time in Iraq, and they must adapt their organizations to deal with contracts. Military planners are familiar with military terms, such as staff principals, course of action, concept of operations, and fragmentary order (FRAGO). But they struggle with contracting terms such as COR, performance work statement (PWS), project planning requests (PPRs), letter of technical direction (LOTD), change order, notice to proceed, and spend plan. Military planners have realistic, experience-based expectations about the timelines associated with the military decision making process and orders processes. However, most do not understand the timelines associated with the contractual equivalents required to go from concept to execution.

One Unit's Experience

The 1st Sustainment Brigade entered the Iraq theater in September 2007, and by November two problems had become obvious: Organizationally, we did not have a single “belly button” to manage all contracting matters; individually, our Soldiers did not have the knowledge of contracting processes they needed to ensure that contractors provided timely and effective support to ongoing operations. The result was that the brigade operated through a series of “crisis reaction drills” because we lacked the organizational capability to plan and contract for changes. Both the brigade and the contractors realized that some action was needed to make changes in our contracting efforts, but no understanding of exactly how to accomplish that existed. The lack of understanding of the contracting process, compounded by the slow response times in contract change processes, led to shortfalls in support operations that had a direct impact on the mission.

When a military operation requires a surge in capability, the natural response is to cut a FRAGO to direct military resources to fill the capability gap. In a contracted effort, where the contractor has operational control of the activity, it is a violation of the PWS to insert military capability without going through the change order process. This is critical for military logisticians to understand when they plan support operations or consider contracting operational control of critical support operations (such as a supply support activity).

A gap existed between evaluations of the contractors' performance and the chain of command's perception of the contractors' performance. Commanders at all levels were not receiving the contracted support they needed in a timely manner, but the contractors were receiving excellent ratings on the work they were contracted to perform. This occurred because the military did not fully understand the contracts and because evaluations were nonexistent or poorly reported.

The brigade commander and staff recognized that a disconnect existed between the contractors and those being supported and took immediate action to define and analyze the problem, implement corrective actions for the immediate deficiencies, and establish recurring controls so that the problem would not continue. The brigade established a small team of two officers to work specifically on the issue.

What Are We Contracting?

The team's first task was to define all of the brigade's contracted efforts. We began by scouring the brigade staff to find out where the service contracts were used in the brigade. This produced the obvious list of LOGCAP contractors. Then we queried the subordinate battalions to find out what contractors they had in their areas. This produced a significant list of contracts that were in place by units that had submitted purchase request and commitment actions through the Joint Contracting Command-Iraq/Afghanistan; these contracts ranged from Iraqi truck drivers to warehouse employees augmenting the military.

Finally, we physically visited all of the brigade areas and identified contractors that were working in our area but did not have a direct relationship with any of our Soldiers. This produced a list of contracts that we categorized as “contracts found on installation.” These were low-density contracts that ranged from foreign-language interpreters to technical support for Standard Army Management Information Systems contracted by CONUS program managers. Each contract performed critical, integral services in support of the military mission but was not fully integrated into the planning and execution functions of the brigade.

What Are the Contractors Supposed to Be Doing?

Unlike military units, where the phrase “and all other duties as assigned” is understood, contractors are paid to deliver the services defined in their PWS. Once the list of contracts was defined, the team started acquiring copies of all contractual documents. These documents included copies of contracts, task orders against contracts, change orders and administrative change letters to task orders and contracts, and LOTDs from the KO to the contractor.

To relate these documents to military terminology, contracts and task orders can be roughly equated to operation orders. They are the base documents that establish services, schedules, manning levels or levels of effort, and reporting relationships. The change orders, administrative change letters, and LOTDs are roughly equivalent to FRAGOs; they communicate to the contractor changes to the original contract and provide direction to clarify or change details in previous contract documents.

Who Is Involved With Contracts?

One critical outcome of these initial steps was a better understanding of all the key players involved in each contract. Each contracted effort has several critical points of contact (POCs) involved in ensuring successful planning and execution. They include the contractor POC, the military contracting and support operations POCs, the military subject-matter expert at the point of delivery for the service (who will end up being the COR), the KO or ACO who directs the contractor, and the DCMA quality assurance representative (QAR) who is responsible for auditing the contractor's performance and compliance and supporting the CORs with training and advice.

The CORs are the day-to-day auditors and Government representatives at the point of service, who are responsible for evaluating the performance of the contractor and facilitating the flow of information between the contractor and the Government. Government support agencies and personnel are available to help logisticians plan and execute contracted support operations, but the bulk of the effort falls back on the customer logistician who desires the support.

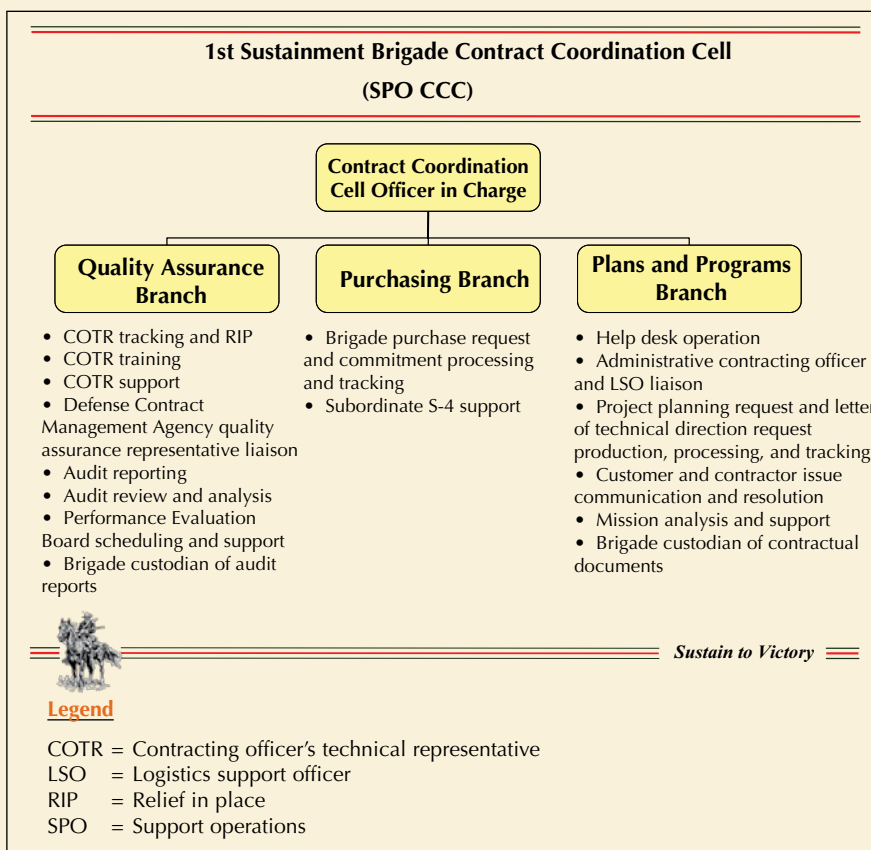
What Are Unit Responsibilities?

The military customer is responsible for planning and preparing the documentation associated with a contracted effort; justifying and obtaining funding for the proposed contract; and monitoring quality assurance and evaluating performance evaluation of contract support.

The mission analysis for an upcoming operation must be conducted with each contract in mind. As impacts or new requirements are identified, the brigade must create or modify PWSs and letters of justification, review planning project estimates and schedules, negotiate with contractors and KOs, and move contracting document packages through the funding review and approval levels, from the brigade headquarters to the corps or division headquarters. Friction is inherent in operating under the constraints of the Army's existing contract procedures, which were written with assumptions that are now dated in the reality of today's operational environment.

What Is Required to Change a Contract?

The procedures, timelines, and documents that must be used to change or establish contracts can be



overwhelming, especially in Iraq. The normal military planning process for operations is well understood by military logisticians; the planning process to conduct contract support to operations is not. The battle drill for processing a change order or LOTD to a contractor in order to facilitate timely and effective support must be a core competence for all Army logisticians in the contemporary operational environment.

The process varies for each contract vehicle. As a logistician, once you understand the existing contracts and POCs, your unit must define the process to change those contracts. The place to start is with the KO, who can provide you with the process for changing contracts for your organization. The military comptroller community can outline the process for obtaining funding approval for the contract. If you do not have the funds to obligate, you cannot get the contract support you desire. Once you know the process, timeline, and documents required to change a contract, you can adequately plan contracted support operations.

1st Sustainment Brigade's Mitigation Approach

Recognizing that action needed to be taken immediately to address the challenges posed by large-scale contracting, the 1st Sustainment Brigade established a contract coordination cell (CCC) under the support operations officer (SPO). The CCC served as the single "belly-button" for all contract matters in the brigade.

Instead of forcing all the players throughout the chain of command to develop the same understanding of contracting procedures and personnel and the same level of proficiency, we opted to create a core team of personnel to serve as a “contracting helpdesk.” The CCC owned contract-related issues and processes for the brigade.

The CCC comprised an officer-in-charge and three branches: quality assurance, purchasing, and plans and programs. The CCC’s personnel were a mix of military logisticians taken out of other shops in the SPO, representatives from national-level agencies and commands (DCMA and AMC), and a LOGCAP contractor representative that the contractor agreed to assign to our organization. (See chart at left.)

The quality assurance (QA) branch was responsible for—

- Identifying CORs and tracking unit transitions that require COR nominations, appointments, and training. During unit transitions, the QA branch is responsible for ensuring that “right-seat, left-seat ride” training is adequate to meet the incoming COR’s requirements.
- Coordinating letters of appointment and initial and sustainment training for brigade CORs.
- Supporting COR requests for assistance, documentation, and training.
- Maintaining liaison with DCMA QARs for corrective action requests.
- Receiving, reviewing, and processing COR daily and weekly audit reports.
- Receiving, reviewing, and processing monthly performance evaluation reports.

The purchasing branch was responsible for—

- Reviewing, consolidating, processing, and tracking all purchase request and commitment (Department of the Army Form 3953) actions for the brigade.
- Assisting subordinate units with purchasing requirements.

The plans and programs branch was responsible for—

- Assisting all brigade subordinate and supported units with contracting questions (the helpdesk function).
- Maintaining liaison with higher, lower, and adjacent contracting POCs to resolve contract issues.
- Preparing, processing, and tracking the completion of all documents and processes related to ongoing contracted activities. These documents include but are not limited to PWSs, letters of justification, PPRs, and LOTDs.
- Supporting operations mission analysis for contract impacts.
- Maintaining a central database of all brigade contractual documents.

The CCC was essential to the success of the brigade in effectively planning and administering the brigade’s contracted efforts.

Improving Contracting

I believe the experience of the 1st Sustainment Brigade in contracting for sustainment operations in Iraq leads to four major conclusions:

Contracted support will continue to be integral to the contemporary operational environment. Multiple deployments have strained all sectors of the Army’s sustainment formations. Contracting certain sustainment functions allows us to devote critical military resources to higher priority requirements. The strain on the military is not going to be reduced significantly in the foreseeable future, so all military logisticians should become comfortable with and proficient at planning for and executing contracted support.

Support operations activities should be retained under the command and control of the military chain of command and augmented by contractors. Contracting operational control of support operations does not allow for the flexibility required in the contemporary operational environment. Contract change processes and timelines do not lend themselves to flexibility and timely, effective support.

Sustainment brigade modification tables of organization and equipment (MTOEs) must be modified to add a contract coordination cell in the SPO section. The current sustainment brigade MTOE does not have an organic CCC. It is imperative that the sustainment brigade MTOE be modified immediately to ensure that it is organized and trained for the current mission.

Institutional training at all levels for tactical contracting is a must. Today’s Army leaders must possess a general knowledge of contracting as a core competence. All Soldiers on the battlefield will interface with contractors, either in their organization or in the course of their duties. Planning, administering, and executing contract support operations must be integrated into Army institutional leader development as a core competence so that our Soldiers possess the baseline knowledge required to function as logisticians in today’s environment.

The contemporary operational environment is volatile, chaotic, and uncertain, and the contracting aspect of this environment is no different. Our Soldiers and formations must be comfortable and prepared for success in this environment.

ALOG

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Human Resources Modularity Tested in Iraq

BY CAPTAIN XARHYA WULF

The Army's most recent transformation began in October 1999 when Chief of Staff of the Army General Eric K. Shinseki announced that the Army was developing plans to transform its Cold War organizations and equipment into a lighter, more responsive force to fill what was seen as a strategic gap in warfighting capabilities. However, it was not until 2003 that the adjutant general community offered Personnel Services Delivery Redesign (PSDR) as a solution to support the human resources (HR) area of the Army's transformation effort.

When PSDR was implemented in 2006, the Army G-1, Lieutenant General Michael D. Rochelle, said that PSDR "impacts how we support our Soldiers in the operational force. It is a revolution in how we deliver support. It is the most significant change in our business we have seen in our careers."

PSDR replaced the legacy structure that used multiple layers of paperwork that made personnel processing tedious, time-consuming, and slow. With PSDR, the personnel services battalions (PSBs) started to dissolve and were replaced by brigade S-1s with the capability of providing essential personnel services and personnel strength accounting.

Of particular note was the creation of HR companies that formed the foundation of the new standard requirements code (SRC) 12 (Adjutant General's Corps) structure. Under the SRC 12 structure, HR elements deploy to theater and provide nonessential personnel services, including postal, casualty, and R5 (reception, replacement, return-to-duty, rest and recuperation, and redeployment). Multiple levels within the HR hierarchy provide technical oversight and guidance to SRC 12 units. The highest level in this hierarchy is at the human resources sustainment center (HRSC). Under the HRSC, embedded within the theater sustainment command, is the HR operations cell, which provides technical oversight to the HR support operations cells (HR SPOs) of the sustainment brigades.

In fiscal year 2006, the 15th PSB deployed to Iraq under the 15th Sustainment Brigade. Consequently, the new structures could not be tested until the 1st, 3d, and 7th Sustainment Brigades arrived in theater in support of Operation Iraqi Freedom, beginning in fiscal year 2007. As suggested in Field Manual Interim (FMI) 4-93.2, The Sustainment Brigade, each of those bri-

gades has attached its HR company to its special troops battalion. The 1st Sustainment Brigade has found this command relationship to be very effective.

Predeployment Coordination

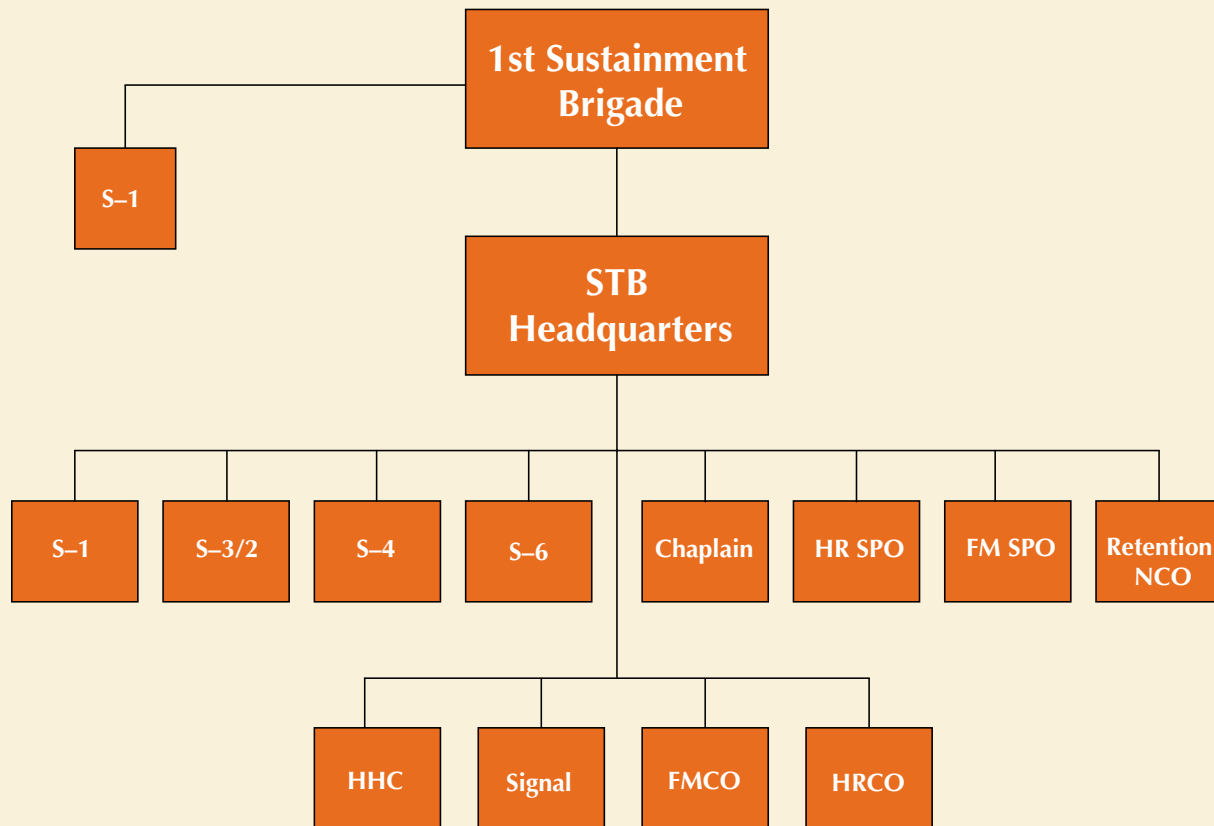
The 1st Sustainment Brigade was activated on 15 February 2007, but the HR SPO did not become fully activated and staffed with its eight personnel until May. Originally, doctrine stated that 12 Soldiers would be in the HR SPO. However, the doctrine has since been modified, and the following eight positions remain:

- Operations officer (O-4).
- Plans and operations officer (O-3).
- R5 and postal officer (O-3).
- HR technician (W-2) (military occupational specialty [MOS] 420A).
- Senior HR operations noncommissioned officer (NCO) (MOS 42A50).
- R5 operations NCO (MOS 42A40).
- Postal operations NCO (MOS 42A30).
- Information systems NCO (MOS 42A30).

With key personnel in place, the first task in the predeployment planning process was to define the roles and responsibilities at each level, from the plans and operations cell to the HR company and its postal platoons, R5 teams, and casualty liaison teams. Unfortunately, being the first iteration of new modular HR doctrine, Field Manual (FM) 1-0, Human Resources Support, was painfully devoid of detailed data. The only thing that the HR SPO cell knew with any clarity was the basic structure.

Therefore, the HR SPO staff—all newly assigned to the brigade—read postal, casualty, and R5 regulations as they sought to understand their roles in relation to the bigger picture, the scope of support, and the units to be supported. Each section NCO cross-trained all of the other team members in his area of expertise. Everyone took both the casualty and mortuary affairs operations center training offered online. They also became familiar with Defense Casualty Information Processing System reports, postal regulatory guidelines, and ongoing theater R5 policies and procedures. The casualty and mortuary affairs training was one of the most beneficial because, as the 1st Sustainment Brigade deployed into theater, a member of the HR SPO was lost from the cell. However, because of the cross-training and information sharing, the HR SPO was able to continue

1st Sustainment Brigade Special Troops Battalion



Legend

FMCO = Financial management company
 HRCO = Human resources company
 HHC = Headquarters and headquarters company
 NCO = Noncommissioned officer
 STB = Special troops battalion

its mission without a moment's hesitation.

The special troops battalion (STB) commander and HR SPO representatives attended a mission readiness exercise at Fort Bragg, North Carolina, and an HR conference at Fort Jackson, South Carolina. The 510th HR Company commander and first sergeant visited the STB at Fort Riley, Kansas, and the HR SPO and the STB command team returned the favor by visiting Soldiers of some of the postal platoons attending training at Fort McCoy, Wisconsin. Initial contact was also made with the 15th PSB in Iraq, the 316th Expeditionary Sustainment Command (ESC), and the 8th HRSC. Through these meetings and contacts, the HR SPO established the foundation for a good working relationship with elements at every level of the HR hierarchy. From these early engagements, we created a staff mission statement and an initial HR SPO standing operating procedure, along with all the point-of-contact information needed to get up and running quickly.

Deployment

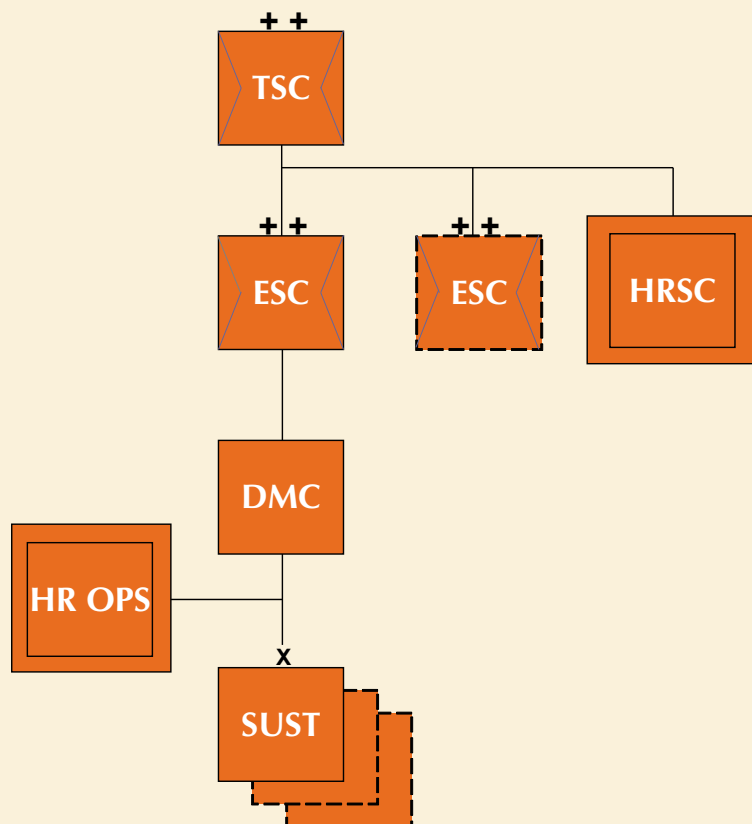
On 19 September 2007, the 1st Sustainment Brigade deployed to Iraq. One of the HR SPO cell's first accomplishments after getting connectivity was attending an HR conference that occurred during our relief in place and transfer of authority (RIP/TOA). The conference was attended by members from various divisions of the 8th HRSC (postal operations, R5, casualty liaison team, and plans and operations), the 316th ESC HR SPO, and the 1st and 3d Sustainment Brigades' HR SPOs.

At this conference, we were able to solidify the relationships that had begun in the continental United States. The event was necessary and proved to be a good beginning for the following reasons:

- It allowed members of the deployed HR community to meet their counterparts and foster working relationships.
- It afforded the members an opportunity to voice their concerns, issues, and questions and then allowed leaders to discuss it in an open forum.
- Most importantly, it provided a common HR vision to all attendees.

Other outcomes of the conference included guidance from the 8th HRSC on the way ahead and a standardization of reports to be used by all sustainment brigades.

Modular Structure



Legend

DMC = Distribution management center
 ESC = Expeditionary sustainment command
 HR OPS = Human resources operations
 HRSC = Human resources sustainment center
 SUST = Sustainment brigade
 TSC = Theater sustainment command

As discussions proceeded, we soon realized that the makeup of the HR SPO had a couple of noticeable shortfalls and that each HR SPO had been embedded differently within its sustainment brigade or STB. The 1st Sustainment Brigade HR SPO was located in the STB and placed under the supervision of the STB commander, who was dual-hatted as the HR and financial management SPO. The 3d SB had placed most of its HR team members at the brigade SPO and one technician at the STB. Although the 7th Sustainment Brigade was not in theater at the time, we discovered that it was planning to leave its entire HR SPO at the brigade SPO.

The 1st Sustainment Brigade attached its HR company to the STB for command and control, although at the time doctrine stated that the STB should provide only administrative control for the HR company with retention of mission responsibilities and authority at the brigade level. This command relationship worked because it allowed the STB commander to have full

control over the mission planning and execution of the HR company. The 1st Sustainment Brigade also retained its HR SPO under the STB because it provided the STB commander with the capabilities and expertise needed to more effectively employ his HR company.

After attending the conference, the 1st Sustainment Brigade HR SPO better understood the challenges it would face in the deployment. The biggest of these challenges arose from the fact that approximately 90 percent of the 510th HR Company elements had been deployed months before the arrival of the HR company headquarters. Since the 510th had to fall under the command and control of someone, it had been placed under the command and control of the 15th PSB. When the 1st Sustainment Brigade HR SPO arrived in theater, its leaders thought that they would conduct a RIP/TOA with the PSB. However, the PSB was waiting for the 510th HR Company headquarters, which was not scheduled to arrive in theater until the end of December 2007. This added layers of command and control that made the flow of information excruciatingly slow. The RIP/TOA process is designed for like units, which made the mixing of legacy and modular formations during the first few months particularly challenging for all.

Postal Operations

From the beginning, the biggest part of the 1st Sustainment Brigade HR mission was postal operations. Concurrent with the RIP/TOA challenges, all Army post offices (APOs) within the 1st Sustainment Brigade footprint were in the process of transferring their missions to KBR in the midst of the Christmas surge. The primary glitch in contracting postal services was that KBR arrived understaffed and largely undertrained to fulfill their postal mission. As if that wasn't enough, the 1st Sustainment Brigade area of operations experienced a loss of air assets that had been used to deliver a significant portion of Soldiers' mail.

Despite these challenges early on, the postal mission during the Christmas surge was executed with unprecedented success. Two key factors contributed. First, quick changes to the distribution plan provided increased frequency and capacity of ground logistics convoys throughout the various destinations. Second, the HR SPO decided to keep some postal platoons working in the contracted APOs to assist the contractors with the mission.

These measures prevented any mail delays in theater and significantly decreased the average time of receipt of mail from the continental United States from what was already a good 10 to 12 days (the military postal standard is 12 to 18 days) to consistently under 8 days. Even during the peak of the holiday surge and on Christmas Day, many Soldiers received packages in only 5 to 6 days. In addition to providing regular APO services, the 1st Sustainment Brigade also executed an average of 21 mobile postal missions a week to units dispersed to locations where a regular APO could not be established.

One of the nondoctrinal positions that the HRSC created to assist the sustainment brigades is the regional director. Regional directors are postal experts who assist the HR companies and postal platoons with resolution of issues and provide postal advice and technical guidance as needed. The regional directors are instrumental in the success of APO inspections because they go out on staff assistance visits and ensure that the APOs comply with the regulations. This needs to be an actual authorized position for the HRSC.

R5

Personnel accountability is the most critical R5 task. The constant updating of the Deployed Theater Accountability System (DTAS) database as Soldiers move through the R5 process is supposed to allow near-real-time visibility of Soldier movement. The intent is to provide visibility of Soldiers as they move within the theater and record when they leave. In concept, this is a great idea. However, this process is not as well synchronized as intended.

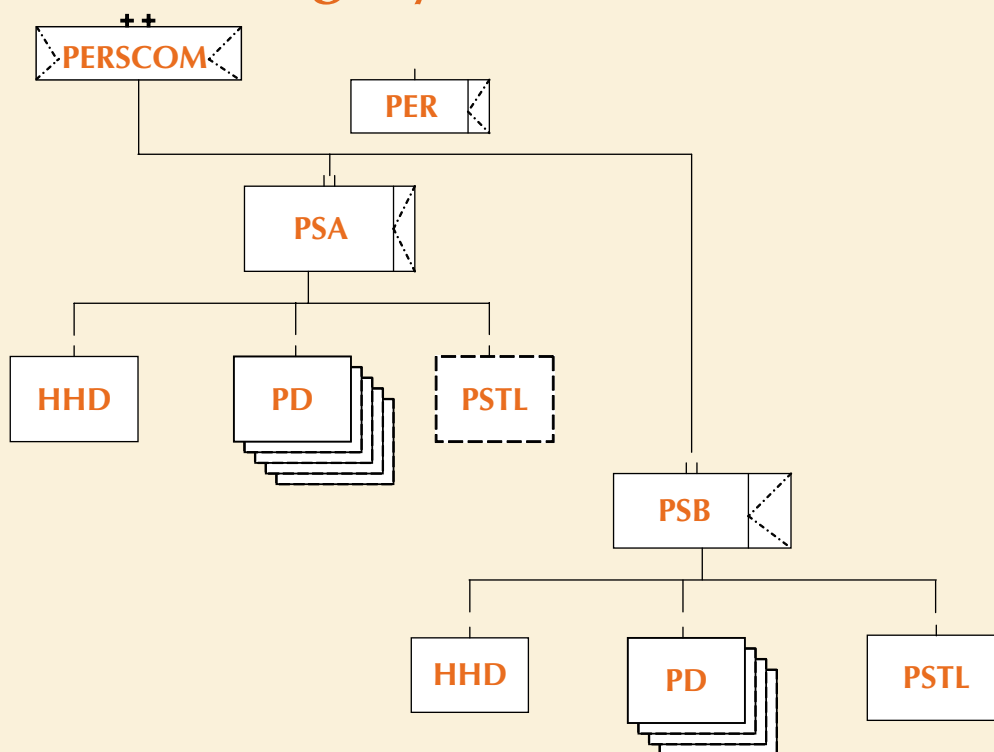
The R5 teams were often undermanned when they arrived in theater and may not have operated at every key intratheater in-transit node. Even areas with an R5 team were not always able to capture all passengers going in and out of a particular

aerial port of debarkation. FMI 1-0.02, Theater-Level Human Resources Support, says that R5 teams will coordinate lodging or transportation of Soldiers delayed while transiting. However, most units at division and brigade level felt the need to put liaison teams at the R5 nodes to manage R5 functions for their Soldiers. This begs the question: Are R5 teams fulfilling their intended roles? To ensure that the R5 teams are properly structured, resourced, and employed to their fullest potential, FMI 1-0.02 should provide clearer, more concise R5 team roles and responsibilities.

Casualty Liaison Team

The 1st Sustainment Brigade was originally sourced with five casualty liaison teams (CLTs), but three were attached to Multi-National Division-Baghdad, Multi-National Division-Central, and Multi-National Corps-Iraq. The fourth CLT was reassigned to fulfill a different HR function outside the brigade. The remaining 1st Sustainment Brigade CLT consisted of five Soldiers who did much more than their doctrinal role. Once a casualty arrived at the combat support hospital,

Legacy Structure



Legend

HHD = Headquarters and headquarters detachment
 PD = Postal division
 PER = Personnel company
 PSA = Personnel services activity
 PSB = Personnel services battalion
 PSTL = Postal operations

a CLT member interviewed the patient to get his vital information. This information was then entered into the Defense Casualty Information Processing System and sent to the necessary agencies within 3 hours.

While the patient was at the hospital, a CLT member entered a progress report every 2 hours. Once a determination was made as to whether the casualty would be medically evaluated or returned to duty, the CLT member submitted an additional report and contacted the Soldier's unit to coordinate pickup of the Soldier. The biggest issue in the CLT realm is the inability to rotate the teams with those in the division casualty cell to prevent combat stress that often affects Soldiers in these roles.

Recommended Changes

The HR SPO, the R5, and the CLT need defined missions. The HR SPO needs a better defined role at each level to preclude the duplication of duties that is currently happening in theater. The R5 and CLT plans and operations sections should be combined at the company level, and the sustainment brigade HR operations cell should be renamed as the HR SPO, with specific roles and responsibilities defined for each element.

The existing command and control relationship does not follow doctrine. In the 1st Sustainment Brigade, the HR company is placed under the STB for command and control because the STB commander has the authority and ability to provide more command emphasis and mission focus to the HR company. Doctrine should be changed to reflect this command and control relationship.

The casualty platoon consists of a platoon headquarters (with just a platoon leader and platoon sergeant) and one or more "plug-and-play" CLTs. In practice, this means that the platoon leader and platoon sergeant may not have a home-station platoon to lead or train every day and, if they do, likely will not deploy with it. The 1st Sustainment Brigade had a casualty platoon that was from one Active component unit while its 5 subordinate teams were from 4 different Reserve component units. That required 6 separate unit requirement forms with 6 separate unit identification codes deploying at different times from 5 different locations to build 1 platoon of 27 Soldiers.

The HR company has no subordinate detachment command structure and, therefore, no reduction in the span of control for the HR company commander. This lack of detachment makes it difficult for the HR company to account for property, provide Uniform Code of Military Justice authority, or groom junior adjutant general captains to keep them competitive with their peers in other branches. A captain subordinate command should be established under the HR company. Similarly, since the CLT and R5 missions employ the same MOS (without the F4 and F5 postal additional

skill identifiers), a single, larger, multifunctional, and multicapable HR operations platoon would further reduce span of control, simplify force structure, and increase mission flexibility.

The primary missions of the HR operations cell's R5, CLT, and postal sections are executed during deployment. The HR SPO garrison mission is to train and prepare for upcoming deployments. The CLT, R5, and postal sections have no mission in garrison. All other garrison functions are executed by the Army Installation Management Command and the brigade or battalion S-1s. This lack of garrison mission causes great angst among adjutant general professionals. What kind of deployment training should be conducted? If stabilization of units is 12 to 24 months before redeployment, is the garrison mission of training and preparing for deployment sufficient for an HR SPO?

Eight Soldiers are authorized for the HR SPO. The requirement should be changed to five Soldiers:

- One O-3 or O-4 to serve as the officer in charge.
- One W-2 to serve as the plans and operations officer or technician.
- One E-7 or E-8 to serve as the overall NCO in charge and casualty NCO.
- Two E-5s or E-6s to serve as the R5 and postal NCOs.

The 1st Sustainment Brigade leaders firmly believe that the success of the HR mission can be attributed to the fact that the HR SPO was placed under the STB. The STB is indeed organic to the brigade, and the brigade staff is assigned to the STB through the headquarters and headquarters company. The two are neither organizationally nor physically separated as they are in a combat sustainment support battalion. Therefore, the STB commander can operate (along with the HR SPO) as the brigade staff officer when collaborating with adjacent and higher organizations, while concurrently serving as the commander responsible for the HR mission. This arrangement has provided more synergy and an enhanced unity of effort than could be attained if the STB merely had administrative control.

ALOG

CAPTAIN XARHYA WULF IS THE BATTALION ADJUTANT FOR THE 1ST SUSTAINMENT BRIGADE SPECIAL TROOPS BATTALION. SHE WAS THE HUMAN RESOURCES OPERATIONS CELL PLANS AND OPERATIONS AND POSTAL OPERATIONS OFFICER-IN-CHARGE AND THE CASUALTY AND R5 OFFICER-IN-CHARGE FOR THE 1ST SUSTAINMENT BRIGADE WHEN SHE WROTE THIS ARTICLE. SHE HOLDS AN M.A. DEGREE IN HUMAN RESOURCE MANAGEMENT FROM WEBSTER UNIVERSITY. SHE IS GRADUATE OF THE ADJUTANT GENERAL OFFICER BASIC COURSE, ADJUTANT GENERAL CAPTAINS CAREER COURSE, AND THE HUMAN RESOURCES MANAGEMENT COURSE.

The Joint Logistics Analysis Tool

BY PETER J. CLOUTIER AND BRIAN K. FRANK

The Army is developing a tool to make detailed logistics forecasts for several classes of supply. The Joint Logistics Analysis Tool will predict sustainment requirements and help logistics planners make better informed decisions.

“We just got word from headquarters to prepare for deployment for up to 1 year. We’ll be executing Operation Plan 1234. The time-phased force deployment data [TPFDD] is available from the Joint Operation Planning and Execution System [JOPES], but be advised that all units have not been selected yet. The G-3 is working on three courses of action (COAs) for a briefing to the commanding general in 48 hours. I need you to brief logistics supportability for those three COAs, and by the way, your briefing follows the G-3.”

The statement above could lead to many days (and all-nighters) of planning using spreadsheets and various independent applications to provide a credible briefing for the general. The task of developing a logistics supportability analysis has been half art and half science. Relying on years of field experience and an ocean of data, logisticians spend anywhere from a few days to several weeks determining whether or not a COA is supportable. To compensate for uncertainty, logisticians often send supplies in large quantities to an area of responsibility (AOR) as soon as an air or sea port of debarkation (APOD/SPOD) is established. Unfortunately, this practice creates “iron mountains” of excess supplies.

The Army has moved more than one iron mountain in the last century to further operational success. At one time, logistics requirements were measured in “days of supply” and were reported in the number of pounds of a particular commodity that would be used per day per Soldier. This was the most accurate process until recently. Now, with the proliferation of technology, we can sharpen our pencils and provide more precise forecasts.

The old proverb, “For want of a nail the shoe was lost,” is not lost on the logistics community. To be most useful to the planners who manage the supply chain, a forecast needs to produce a detailed list of requirements for all classes of supply. A logistics planner needs to answer these questions: What will be needed? Do I have enough on hand? When will it be needed?

The Joint Logistics Analysis Tool

Until the Joint Logistics Analysis Tool (JLAT) prototype was released for testing in June 2008, the Army did not have a comprehensive tool to make detailed logistics forecasts for several classes of supply. The original JLAT concept was developed using a Microsoft Access platform, but the large amount of data required to create a forecast quickly outpaced Access capabilities. The Army Materiel Command (AMC) G-3 employed the Software Engineering Center-Belvoir (SEC-B) to manage the JLAT program. SEC-B expanded JLAT computer capabilities using an Oracle platform and stand-alone servers to sort gigabytes of data into useful reports.

The heart of JLAT is a robust data center that pulls historical data from the AMC Logistics Support Activity, equipment density data from program

For want of a nail the shoe was lost.
For want of a shoe the horse was lost.
For want of a horse the rider was lost.
For want of a rider the battle was lost.
For want of a battle the kingdom was lost.
And all for the want of a horseshoe nail.

—Old Proverb

executive offices and project managers, usage data from the Operating and Support Management Information System, unit structure information from the Army Force Management Support Agency, and current national inventory positions from Total Asset Visibility (TAV).

JLAT is a classified, web-based, decision-support and forecasting tool that is capable of predicting Army sustainment requirements to the national stock number (NSN) level of detail. AMC is developing JLAT internally to support specific planning data requests

during crisis action planning. JLAT will allow users to use force information, operating tempo (OPTEMPO) information, and logistics planning factors created specifically for JLAT to forecast logistics sustainment requirements to the NSN level of detail.

The planner at any level can define the force using a TPFDD from JOPES or build units and equipment lists for the forecast by standard requirements code (SRC), unit identification code (UIC), or unit type code. When planning begins, the planner may only know the types of units needed for the deployment. But as the plan matures, the planner can define some of the units by SRC and provide better equipment and personnel data for a forecast. Defining the force by UIC identifies specific, available units for deployment, equipment shortages, equipment compatibility with supporting and supported units, and modification table of organization and equipment personnel densities.

Forecasting Logistics Requirements With JLAT

JLAT focuses on Army operations and creates forecasts for classes I (subsistence), II (clothing and individual equipment), III (petroleum, oils, and lubricants), IV (construction and barrier materials), VI (personal demand items), VII (major end items), and IX (repair parts). Class V (ammunition) will be addressed in future iterations of JLAT.

For classes II and IX, planning factors in the Army Status of Resources and Training System (ASORTS) are based on past demand, equipment densities, and usage. These planning factors, when applied to unit equipment sets at OPTEMPO rates determined by the

The benefit of JLAT is the ability to use the forecasts to determine how much of a particular NSN a unit needs for its deployment and whether or not sufficient stocks are on hand to support the deployment.

planner, generate forecasts that tell planners and item managers when to ship needed parts and how many to ship. This alleviates the burden on the strategic air fleet and allows a greater reliance on sealift assets to meet anticipated demands.

With greater confidence and reduced risk, deployed units can ship repair parts using a better mix of surface and airlift assets to reduce the iron mountain effect. Using JLAT reports, high-cost, lightweight items or high-technology items can be shipped by air throughout the deployment and low-cost, heavyweight items can be economically shipped by surface transportation.

Planners will be able to make better informed supply chain management decisions using the wide variety of JLAT reports to prioritize requirements.

According to Niels Biamon, Deputy for Current Operations, G-3, at AMC headquarters—

The immediate benefits of JLAT are obvious: knowing how much of an item will be needed, when it will be needed, and whether we have enough to support an operation; but it's the second and third order effects that will pay dividends during the deployment. By sending the sustainment stocks to the AOR only when needed, congestion at the PODs will be alleviated, improving supply throughput. The PODs become cross-docking stations or transportation nodes instead of storage areas resulting from the rapid and continued delivery of supplies. This should result in less logistical assets being required which will reduce our footprint in theater. It could also help us forecast repairable item retrograde and the expected throughput for forward repair facilities.

For all classes of supply except II and IX, planners create forecasts based on mission, personnel densities, and equipment densities. For example, before a deployment begins, the TPFDD will provide personnel densities and flow rates to determine the number of meals ready-to-eat and unitized group rations the Army will need to procure to support the operation as it matures. Personnel densities also shape the class VI stockage design. Estimates regarding things like the projected number of enemy prisoners of war, troop camp requirements, and supply storage facilities drive the class IV requirements at the macrolevel.

JLAT provides planners with default OPTEMPO values and planning factors to run forecasts immediately. But if planners, based on experience or direction from higher headquarters, want to change OPTEMPO values, they can make modifications before the scenario is forecasted. Forecasts for a particular operation plan may be based on several COAs. Within each scenario-driven COA, planners can alter the phases of the operation (such as mission staging, offense, defense, and stability operations), OPTEMPO, equipment densities in theater, units supporting the operation, and arrival dates.

Planners can use more than one way to get the job done. A planner can generate multiple COAs and run them overnight to leave more time for analyzing the results. Planners can also look at forecasts by specific NSNs or by types of supply items (like engines or tires) to help prioritize their distribution in the AOR.

Why Is JLAT important?

The benefit of JLAT is the ability to use the forecasts to determine how much of a particular NSN a unit

needs for its deployment and whether or not sufficient stocks are on hand to support the deployment. JLAT alerts item managers at AMC's life cycle management commands to potential shortages so they can ramp up their acquisition cycle to ensure their supply will meet or exceed demand from the field. Logistics planners at the combatant command and service component levels will also benefit from the ability to see the forecasted distribution of secondary items throughout the deployment period. This will allow them to determine the most cost-effective and prudent methods of transportation for sustainment supplies and to prioritize limited resources.

For example, if JLAT forecasts a need for 100 of a specific item to be distributed to the force during a 219-day deployment, the service component, item manager, or U.S. Transportation Command (TRANSCOM) manager can make decisions regarding the most effective use of strategic lift assets. In this case, the plan may

Many factors affect the actual outcome of an operation, but JLAT contributes more science to the art of sustainment planning.

dictate that an APOD will be secure for deliveries within 5 days and an SPOD will receive deliveries within 30 days. So delivering high-priority parts by air for the first 30 days and by sea thereafter will facilitate distribution to the AOR. Logisticians can make plans to load ships based on the forecast so they can move the iron mountain one rock at a time instead of all at once.

JLAT is not an execution system. It does not order sustainment supplies for a deploying unit; that is still the responsibility of a logistician. JLAT tells the logistician what is needed, when it is needed, and if there is enough on hand at the time of the forecast to complete the deployment. Logisticians, being typically resourceful in their day-to-day business, can use the forecast output to develop operational policies and sustainment plans that compensate for projected demands and shortages. Factors like secondary item cost and reparability can be gleaned from the stockage or cost reports. Low-density, low-demand, highly critical secondary items can also be identified so that success is not hampered "for want of a nail."

The Future of JLAT

JLAT 1.0 is a prototype. Its utility and accuracy will continue to improve through extensive user cooperation and testing. AMC's life cycle management commands will be among the first to evaluate JLAT's functionality,

accuracy, and user-friendliness. In addition to adjustments made based on user testing and feedback, JLAT 2.0 will—

- Improve user interface and functionality.
- Include remaining ASORTS and high-priority non-ASORTS systems in the class IX forecast.
- Develop frequent feeds from enterprise databases to update JLAT federated database tables.
- Integrate JLAT output into TRANSCOM's distribution planning models.
- Expand JLAT's forecasting ability to include all supply items except class VIII (medical materiel) items.
- Create report templates that provide planners with the information they see as most critical.

In the future, JLAT will be tested by using a forecast and comparing that forecast to actual sustainment data for comparison and analysis. Many factors affect the actual outcome of an operation, but JLAT contributes more science to the art of sustainment planning. Even a less detailed forecast will provide a good starting point because of the level of detail JLAT offers.

Provide a detailed brief to the commanding general in 48 hours on the sustainment plan for three COAs? With JLAT, it will take little effort to quickly produce three or more forecasts for all classes of supply. JLAT 2.0 is in development with a release date goal of June 2010. The Army, as the executive agent for land-based logistics in the AOR, is leading the way for JLAT. With the adaptive planning and execution process as the paradigm for deliberate and crisis action planning, JLAT gives the planner the ability to develop multiple baseline COAs, assess their supportability, and make changes as the plan matures—all without having to burden a staff with days of data gathering and analysis. Bringing in the requirements from sister services is the next step to ensuring that resources are properly planned for, prioritized, and budgeted. **ALOG**

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Lightweight Modular Causeway System: Logistics Advanced Concept Technology Demonstration

BY MARGARET A. DEMING

Since their inception in 1995, the Department of Defense's Advanced Concept Technology Demonstration (ACTD) and Joint Capability Technology Demonstration (JCTD) programs have deployed critically needed warfighting solutions to every major theater.

The combatant commands drive ACTDs and JCTDs through their stated operational priorities and needs, which are then applied to a more agile acquisition process, yielding results years ahead of traditional materiel development cycles. By stressing technology and integration of capabilities rather than technology development, ACTDs and JCTDs can provide prototype capabilities to the warfighter more quickly and provide follow-on support in the evaluation of those capabilities.

A sterling example of these programs is the lightweight modular causeway system (LMCS), which comprises one-half of the Joint Enable Theater Access Sea Ports of Debarkation (JETA/SPOD) ACTD. LMCS's development was strongly supported by the U.S. Pacific Command (PACOM), its combatant command sponsor; the Army Engineer, Research and Development Center, which provided technical team support; the Army TACOM Life Cycle Management Command, which provided transition team support; and the Space and Naval Warfare Systems Command, which provided operational management team support. Contractor support came from Alion Science and Technology, Booz Allen Hamilton, Demaree Inflatable Boats, Oceaneering International Incorporated, and Quantum Engineer Design Incorporated. The Marine Forces Pacific Experimentation Center provided an independent assessment at various points during this multiyear project, helping the teams to stay on task and focus on problem areas.

Concept and Development

DOD strategists continue to forecast a requirement for shallow-draft vessels to be used for conducting offload operations at austere sites. These operations and natural disasters require a new causeway system that is transportable by, and employable from, intratheater sea-lift vessels such as the joint high-speed vessel.

The core technologies used in designing and building the causeway prototype included quick-deploy, lightweight pneumatics; lightweight materials; high-strength

elastomeric springs for joint compliance between modules (the same technology used to mitigate the effects of earthquakes in building construction); and high-strength fabrics for robust puncture- and abrasion-resistant floatation components. These technologies reduced the causeway's size and weight by 50 percent. Based on successful initial tests at Fort Eustis, Virginia, and Vicksburg, Mississippi, LMCS segments were fabricated and the complete unit, including a shipboard emplacement and recovery system, was tested and demonstrated on the Army logistics support vessel *5 MG Charles P. Gross* in September 2008.

Transformational and Interoperable Technology

This transformational logistics technology was designed from the ground up to meet the current and future operational needs of the joint warfighter. Whether the need is force projection, maneuver, sustainment, disaster relief, or noncombatant evacuation operations, the key elements of a successful military response include speed, agility, and access.

A hybrid of the tactical fixed bridging and the floating causeway system, LMCS will increase the number of potential landing sites by bridging the gap between an austere environment and a point offshore with sufficient depth for vessels to operate. It is lighter and more agile than current systems, allowing for rapid delivery of food, water, and needed medical supplies in case of a loss of roads, bridges, or port infrastructure. The system can deploy as many sections as needed.

Future plans include deploying LMCS across mud-flat and tidal estuary barriers and testing its suitability for intermodal land, sea, and air transport, including transport by C-17 and C-5 military airplanes or heavy-lift helicopters. It also can be hauled by truck. The system is compact, allowing 120 feet of causeway to be shipped or stored in a space with a footprint equal to that of three 20-foot ISO (International Organization for Standardization) containers. LMCS is fully interoperable with existing and future Army and Navy watercraft and is designed to handle all classes of military vehicles, including the 70-ton M1A2 Abrams tank.

Unlike other systems, the LMCS uses no in-water connections. And in contrast to the current causeway

systems, which can take over a day and a company of Soldier or Sailors to assemble, LMCS can be deployed by seven trained personnel and be operational in approximately 3 hours. An equal number of personnel can recover the system in approximately the same time. The system is stored in a folded configuration with floatation bladders empty. When deployed, the system is sequentially joined, or assembled, and the floatation bladders are inflated. The bladder nearest the shore can be partially inflated as needed to provide a ramp-like entry and exit point.

A unique feature of the LMCS is that the floatation bladders will not be filled with high-pressure air. Instead, they will be rapidly filled with only the volume of air suitable to provide floatation for the roadway system. This significantly speeds up deployment times and can be done with a prepressurized compressed air system (similar to that used to inflate aircraft emergency exit slides) or with a lightweight portable blower system that is smaller than a commercial vacuum.

Challenges

No project is without challenges and solutions. A delay in funding and a 40-percent increase in some material costs, such as ship-grade aluminum, meant that the team had to develop, design, build, and test the new system in 15 months instead of the 24 months originally planned. This included breaking design paradigms in order to meet operational requirements and achieve compliance for austere coastal operations, to include survivability in high sea states. To meet this requirement, the LMCS teams developed a new double-compressive joint using high durometer urethane elastomers that provided dependable, repetitive compliance with very limited fatigue and that could support an M1A2 Abrams tank.

Another significant challenge came in the form of simple program management. As the operational managers, the Hawaii-based team was responsible for preliminary design reviews, critical design reviews, and outreach. The technical management team comprised engineers and scientists in Mississippi (causeway), Oregon (floatation system), and Maryland (shipboard deployment system). Transition management (insertion into a DOD Program of Record and outyear funding) was centered in Michigan. A successful ACTD program requires solid program management and, in this case, a balance between discipline and flexibility in scheduling, careful consideration of risk mitigation options, and concise but thorough communications.

Success and Transition

Active, engaged leadership is essential to the success of any program. Throughout this multiyear project, the ACTD team received support from senior PACOM leaders, successive Army Chiefs of Transportation, and the Army Deputy Chief of Staff G-8. Early support came



An M1088 medium tactical vehicle crosses a lightweight modular causeway system.

from the Marine Corps Combat Development Command. In September 2008, PACOM hosted a successful Distinguished Visitor Day that culminated with a flawless demonstration of the LMCS.

The system was delivered on time, on budget, and within performance goals. Now the capability must be accepted by a DOD Program of Record, and funds must be identified for future life-cycle requirements. The Product Director, Army Watercraft Systems, and the Army Deputy Chief of Staff G-8 have agreed that PACOM will retain the prototype system for use in the Pacific theater during fiscal years 2009 and 2010. Transition of the causeway to the warfighter as a required capability is planned to occur as early as fiscal year 2012, in concert with the fielding of the Army's first joint high-speed vessel.

Overall, this effort employed a team of teams from Government and industry and was dispersed organizationally among multiple commands, geographically among multiple locations, and culturally (from science and research and development to engineering, manufacturing, and operations). Maneuvering from concept through program approval by the Office of the Secretary of Defense, design, development, testing, training, assessment, and acceptance of a new capability in just 4 years is a strategic success and holds promise not only for DOD but also for non-DOD professionals conducting disaster relief and humanitarian assistance operations worldwide.

ALOG

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Earning a Graduate Degree at ILE

BY WILLIS F. JACKSON, JR., GERALD J. LEONARD, AND GINA SMITH

Intermediate-level education students now can earn a master's degree in supply chain management and logistics from the University of Kansas while they attend the Army Command and General Staff College.

On 12 June, 10 logistics officers and 1 international officer graduated from both the University of Kansas (KU) School of Business and intermediate-level education (ILE) at the Army Command and General Staff College (CGSC). They were the first officers to take advantage of a new opportunity for ILE students to expand their future potential with a new specialized graduate degree in supply chain management (SCM) and logistics.

When Did the SCM Degree Program Begin?

The key organizations involved in developing the new degree program are the KU School of Business, located in Lawrence, Kansas; the Department of Logistics and Resource Operations (DLRO), one of five teaching departments at CGSC, which is located near Lawrence at Fort Leavenworth, Kansas; and the Army Logistics Management College (ALMC) at Fort Lee, Virginia, which is the administrator for the Army's National Logistics Curriculum (NLC).

In August 2007, DLRO began talking with ALMC about becoming certified as an NLC school, primarily for the Logistics Corps officers attending ILE. After the idea was accepted, the KU School of Business, in coordination with DLRO and ALMC, developed a program plan for a master of science in business (MSB) degree with an SCM and logistics concentration. The NLC approved the proposed curriculum on 16 October. The pilot year began in August 2008 and concluded with awarding the first degrees in June 2009.

How Does the Program Work?

The KU MSB-SCM program is a 30-credit-hour program of study. Professors from the KU School of Business teach 24 credit hours directly, and DLRO faculty teach 6 hours during ILE. The curriculum program is shown at right. All courses are taught in the Lewis and Clark Center at Fort Leavenworth. The course is designed around the 10½-month "CGSC year." Many students have commented on the great advantage of having both the KU and ILE programs conducted at the same location.

The KU program is designed primarily for the logisticians attending ILE to enhance their existing expertise and knowledge of logistics. The courses apply best business practices from the civilian sector, relate them to the SCM arena, and then apply them to Army theater distribution operations. Although the program is developed primarily for the logistics major (O-4), it is open to any major attending ILE who has the background and credentials to be admitted to KU. According to the KU School of Business website:

The Master of Science in Business with a Supply Chain Management and Logistics concentration is aimed specifically toward Army Majors and Major-eligible Captains. The degree will complement the quality military supply chain education officers enjoy while enabling a broader, civilian economy focus for those who plan to pursue logistics careers after military service.

The KU School of Business is one of 168 schools accredited by the Association to Advance Collegiate Schools of Business (AACSB). The MSB-SCM degree is fully accredited as a new concentration under the school's existing MSB degree. The program's content and accomplishments will be addressed for continued accreditation during a scheduled AACSB assessment in approximately 3 years.

Why Is the SCM Degree Valuable?

Why should officers consider an advanced civilian degree? Department of the Army Pamphlet 600-3, Commissioned Officer Professional Development and Career Management, states:

Self-development is the responsibility of every officer and ranges from professional reading during off-duty time to aggressively seeking positions of increased responsibility. Each officer, with support from mentors, should develop career goals and clearly articulate those goals to the commander and the assignments officer at the AHRC [Army Human Resources Command] ... Officers are encouraged to continue to broaden their logistics experience by ... Obtain[ing] a civilian degree in logistics-related fields.

The KU School of Business MSB–SCM program combines the business and military logistics environments to develop future thinkers. The program presents instruction in the required foundational courses as well as advanced graduate courses. When students graduate from this program, they are ready to function as leaders with knowledge of business foundations and best business practices in supply chain management, transportation, procurement, information systems, change management, and project management.

How Does a Prospective Student Get Accepted?

For ILE students to be considered for the MSB–SCM program, they first must be accepted as graduate candidates into the School of Business graduate degree program. To be accepted, ILE students must—

- Have an undergraduate degree awarded at the bachelor's degree level.

- Complete a KU Graduate School application on line. As part of the application process, the graduate candidate is required to answer three essay questions on line.

- Provide an official transcript.
- Provide two letters of recommendation.
- Include a current officer record brief.
- Include a signed KU Academic Code of Honor form.

More information on the application process can be found on the KU School of Business homepage, www.business.ku.edu/Master-MSB-SCM.

Foundational curriculum

Supply Chain Logistics I (CGSC) (3 credits)
 Supply Chain Logistics II (CGSC) (3 credits)
 ACCT 701: Financial Accounting (2 credits)
 BE 701: Managerial Economics (2 credits)
 DSCI 701: Statistical Decision Making (2 credits)
 FIN 701: Financial Management (2 credits)
 SCM 701: Introduction to Supply Chain Management (2 credits)
 MGMT 704: Strategic Management (2 credits)

Advanced courses

MGMT 895: Change Management (2 credits)
 SCM 703: Transportation and Logistics Systems (2 credits)
 SCM 702: Procurement and Supplier Management (2 credits)
 SCM 704: Information Systems for Supply Chain Management (3 credits)
 SCM 710: Capstone in Supply Chain Management (3 credits)

The curriculum for the master of science in business degree with a supply chain management and logistics concentration.

How Does the Degree Program Work With ILE?

The Dean of the School of Business and the Director of the MSB–SCM program are dedicated to the success of the degree program at ILE. The KU program director, Greg Freix, and the CGSC DLRO deputy director, Willis Jackson, Jr., collaborated on the class schedule to reduce workload conflicts between the two educational programs. The ILE curriculum workload is, in effect, a full master's degree program. To make the KU MSB–SCM program successful, coordination and mutual understanding between both campuses enables the students to manage both programs. The students complete their ILE classes during the day at Lewis and Clark and then pursue their degrees in the evening. For example, when students are involved in their ILE exercise, from 0830 hours to 1730 hours daily, KU MSB–SCM classes are not scheduled. This gives students time to focus on the ILE exercise and also to spend time with their families.

The future of the KU MSB–SCM program will be determined by the success of the logisticians attending ILE at Fort Leavenworth. With a student population of approximately 175 logisticians filling 2 ILE courses a year, the expectation is that the demand for the MSB–SCM degree program will increase. The plan for the upcoming August 2009 class is to offer the program to 32 logisticians; the possibility exists that the program could also be offered to future February ILE class attendees.

Students can choose from nine different advanced degree programs while attending ILE to fulfill career goals and to broaden their logistics experience. An advanced degree in supply chain management and logistics will allow ILE students to expand their professional development, apply this experience in the operational military, and perhaps one day fashion a highly desirable civilian career. **ALOG**

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No Belts Required: The Advantages and Limitations of Statistical Quality Control

BY MAJOR DONOVAN O. FUQUA

Lean Six Sigma (LSS) is a popular trend associated with making any process or organization better. This article suggests that, although LSS can be a powerful tool, it is poorly understood in the field, does not fit current military doctrine, and has severe limitations for use with complex military sustainment operations. The two main tenets of LSS, statistical quality control and waste reduction, are important to logisticians. The Army logistics community must find ways to apply those concepts to logistics operations and educate multifunctional logisticians.

The idea for this article developed from the tendency of Army logistics professionals to misunderstand LSS and use it as a catchphrase. According to many logisticians in the Army, LSS is simply about becoming more efficient. This article, however, proposes that merely repeating slogans does not create learning in an organization.

The current use of LSS within the Army logistics community generated the questions that form the basis of this article: How many logisticians who have used the acronym LSS can accurately describe what it is or, more importantly, how it relates to military operations? How does LSS relate to systems theory, complexity science, and supply chain networks? Based on those questions, this article will address the following questions relating to LSS and military logistics:

- What is LSS?
- How is LSS used in organizations to improve processes and reduce system variation and waste?
- Where does LSS succeed and where does it fail when describing complex adaptive systems found in real-world organizations?
- If LSS is flawed, how should the Army use statistical quality control and waste reduction techniques?

What the article does not do is discount the positive work done by professional logisticians seeking to make Army processes more efficient and capable, regardless of the methodologies used. Six Sigma and Lean are two separate processes. Understanding the

differences between the two is critical to understanding how the concepts should be used.

The Six Sigma Model

Six Sigma is a statistical quality control method of reducing variation and limiting defects within a process. Because defects are costly to businesses both in terms of potential excess process costs and lost business, Six Sigma is attractive to businesses that want to produce outputs with consistent specifications. Organizations in a variety of industries, such as manufacturing, healthcare, and even customer service, have institutionalized Six Sigma with varied success.

The Six Sigma model uses the “define, measure, analyze, improve, control” (DMAIC) method of improving quality in a system. The DMAIC method is further described like so:

- Define: Set goals for a project.
- Measure: Find the current performance.
- Analyze: Find the causes of variation.
- Improve: Fix the problems.
- Control: Monitor or control the process.

The goal of the process is to cut costs and reduce variation and defects by “tying quality control directly to financial results.” Six Sigma training is usually concentrated on the DMAIC model and attempts to carry the model into all areas of the business.

The basic premise of Six Sigma is meeting the statistical goal of having plus or minus six standard deviations between the product target and the upper and lower specification limits. For example, if a ball bearing process had a target of 0.50000 inches \pm 0.00005 inches, using six standard deviations indicates that your production should be within specification to \pm six standard deviations (identified by the Greek letter σ) from the target (three errors per billion produced). (See the table at top right.)

The Six Sigma model, however, gives the process a completely arbitrary \pm 1.5 σ away from the target for the actual mean. Because of this, the true goal is for the sum of the products to be within \pm 4.5 σ or for the process to generate only 3.4 defective parts

Number of standard deviations away from the mean	Percent of values in a sample given a normal distribution
1 σ	68.26%
2 σ	95.45%
3 σ	99.73%
4 σ	99.9937%
5 σ	99.999942%
6 σ	99.999998027%

This table shows the percent of values within certain standard deviations. The premise of Six Sigma is meeting the statistical goal of having plus or minus six standard deviations between the product target and the upper and lower specification limits.

per million. (See the figure at bottom right for a normal distribution of values.)

Although controlling variation has always been a core component of any quality control program, engineers working for Motorola in the early 1980s were the first to coin the term “Six Sigma.” Bill Smith, a Motorola reliability engineer, found that the actual defect rates at Motorola were higher than the company had figured based on the defects found in the factory (type I defects). The defects overlooked in the factory were then, unfortunately, found by consumers (type II defects). At the Motorola Research Institute, he and Mikel Harry refined their methodology and helped establish the idea of defect-free manufacturing in all other sectors of business at Motorola.

Motorola, Texas Instruments, Microsoft, American Express, and General Electric have all used Six Sigma. To varying degrees, these businesses have incorporated the Six Sigma process into their culture as an overarching method of improving quality and reducing costs. Because success almost always breeds imitation, Six Sigma has become a catch-phrase and a business in itself, often far from its original statistics-based roots. A quick search on Amazon confirms that a great number of books have been written about Six Sigma. A roughly equal number of businesses will train managers from any paying business on the “best” practices. In the past few years, the Army has become a voracious customer.

As Six Sigma has expanded from a statistical tool to more of a managerial tool, model instructors have expanded the program from improving manufacturing quality control to enabling cultural changes within any organization. Companies such as iSix Sigma and Motorola University offer classes for cultural change within

institutions. Training is geared toward different levels in the institutions and is often given karate-level titles: green belts, black belts, master black belts, champions, and executive leaders. The idea is that all levels of the business must be committed to instituting Six Sigma quality control as a core component of the firm. The Army has embraced this belt system—even offering additional skill identifiers (1X, 1Y, and 1Z) for training completed.

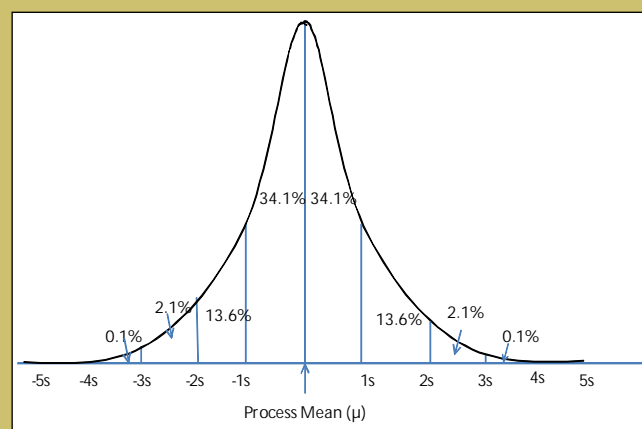
The Lean Model

Lean is a philosophy of reducing cost, increasing speed, and eliminating waste in warehousing, ordering, and manufacturing. Unlike Six Sigma, Lean is not a method of statistical quality control. The two main tenants of Lean are just-in-time logistics and smart automation. A good metaphor of the difference between Six Sigma and Lean is the difference between a microscope and a telescope. Six Sigma attempts to focus on a single variable in order to control variation. Lean uses a wide view of the entire process in order to identify wasteful actions.¹

Lean grew out of methods developed by the Toyota Production System in the 1970s. This method focused on reducing the “seven wastes”: defects, overproduction, overprocessing, conveyance, inventory, motion, and waiting. The goal of the method was to improve customer value and profits. The combination of Six Sigma and Lean was likely due to the logic that if two good things are paired, something great will result.

Other Quality Control Methods

Total Quality Management (TQM) grew out of a program, instituted by W.E. Deming, that worked to reestablish Japanese industry after World War II. The program called for continuous improvement, process feedback, and a focus on quality within an organization.



This curve shows the percent of values in a sample given a normal distribution.

¹ Martin C. Jennings, “How the Army Should Use Lean Six Sigma as a Transformation Strategy for Logisticians in the 21st Century,” Army War College, Carlisle Barracks, Pennsylvania, 13 February 2006.

Generally, TQM is considered to be a precursor of Six Sigma. The basic difference is that Six Sigma imposes an arbitrary statistical boundary to define what quality should resemble. However, in many ways, Six Sigma training is very similar to TQM training in that they both work to instill cultural changes in an organization and focus on improving product quality.

ISO 9000, which is maintained by the International Organization for Standardization, is an international quality standard used in contractual situations and is often the standard in international trade. It uses third-party registration and is a quality tool in industry. Unlike Six Sigma, ISO 9000 is not easily applied to nonmanufacturing industries.

LSS and Complex Adaptive Systems

LSS cannot be effectively applied to complex adaptive systems. Complex adaptive systems are characterized by nonlinearity (defined in this article as unproportional and nonadditive relationships between variables²), complex variable interaction, the presence of many variables, and the mixing of deterministic, stochastic, and self-organizing variables. Generally, these systems are identified by their tendencies toward emergent behavior, unpredictable ordered effects, many possible feedback loops, and interdependencies. A system is adaptive if it changes its behavior in response to external stimuli. Complex adaptive systems are commonly described as “wicked problems” because they are difficult to frame and require iterative problem-solving techniques, so it is difficult to find the right associative problems for them. This article suggests that most real-world strategic and operational systems are both complex and highly adaptive.

LSS focuses on controlling a single variable without considering the effects of interaction on the system. This is apparent when you consider that LSS originated in manufacturing. When you are constructing a silicon wafer with specification limits within one micron, LSS is a powerful tool in limiting variation. But when you are dealing with highly interdependent social systems, reducing variation in a single variable could have unintended consequences.

If no distinct process specifications exist, LSS is unable to measure success. Simply wanting to make something better or faster is an unquantifiable goal. On the other hand, placing sufficiently large specification limits on a process can guarantee compliance to six standard deviations.

LSS fails to consider inherent process turbulence seen in dynamic systems when working to control variation. Natural process turbulence can often appear as random variation if it is not thoroughly analyzed. Turbulence (even within one variable) can result from periodicity³, autocorrelation⁴, Chaotic system behavior⁵, or fractional geometries⁶ within time series data.

Statistical quality control, whether you are using Shewhart⁷ control charts, LSS, TQM, or another methodology, is a powerful tool in controlling quality in linear systems or nonlinear systems not influenced by process interactions. However, in the Army, very few operational processes can be classified through linear causation models. It is much more likely for real-world systems to be dynamical, contain self-organizing and adaptive variables, and have complex variable interaction.

For example, imagine a situation in which you want to reduce variation of delivery time (a variable) from seaports in the United States to a seaport in a deployed

² Functions are linear if and only if: $f(x_1 + x_2 + \dots + x_n) = f(x_1) + f(x_2) + \dots + f(x_n)$

³ Periodicity is the quality of recurrence at a regular interval and may be subject to the combined effects of multiple waves within a process. This can be detected through Fourier analysis (a technique of describing a time series in terms of the frequency domain of its periodic constituents).

⁴ Autocorrelation is the tendency for time series data to form patterns or correlate with itself. It is the autocovariance divided by the variance. In statistical analysis, data is normally examined with lags of 1 through $N/4$ (N =number of data points). A value of +1 indicates perfect patterning, -1 indicates perfectly inverse patterning, and 0 indicates no patterning. Where m =lag number, this value is:

$$autocorrelation = \frac{\sum_{t=1}^{N-m} (x_t - \bar{x})(x_{t+m} - \bar{x})}{\sum_{t=1}^N (x_t - \bar{x})^2}$$

⁵ Chaos (as opposed to small ‘c’ chaos) is a phenomenon where systems appear random but actually have repeatable patterns and are dynamical, deterministic, and nonlinear. Chaotic systems exhibit sensitivity to initial conditions and the potential for attractors. The author recommends *Chaos Theory Tamed* by Garnett P. Williams (Joseph Henry Press, Washington DC, 1997) for more information on this phenomenon.

⁶ A fractal is a set of points whose dimension is not a whole number. This definition refers to fractional geometries (or dimensions) that are non-integer (e.g. $R^{2.3}$). This phenomenon was first described by Benoit Mandelbrot in 1960 in his study of cotton future prices, where he described linear processes in fractal geometry that appeared random in 2 dimensional space.

⁷ Walter Shewhart is often referred to as the “father of statistical quality control” for his work in standardizing and controlling manufacturing at Bell Telephone Laboratories from 1925 through 1956. He developed a series of control charts that indicated when a process was moving out of tolerance based on process mean (a variable), numbers of parts nonconforming in a sample (an attribute), or as an exponentially weighted average of a sample (to reduce process memory). His control charts are normally built around a three standard deviation limit.

location. Without a doubt, apparent and possibly unknown variables in that model are deterministic, stochastic, and self-organizing. You can work to control the speed of the vessels, but you cannot control the weather processes (which are not constant factors) or the political processes on vessel selection (a set of self-organizing variables). Although you can control the speed variables, there would be second- and third-order effects based on decisions. This is a relatively simple example, but it is representative of what happens when you attempt to control a more complex system.

Logisticians must recognize the type of system they are attempting to control before determining control methodologies. When systems are simple or mechanical, statistical quality control is an acceptable tool for reducing variation and increasing product quality. In complex systems, a different methodology must be used.

One method that has shown promise in dealing with complex adaptive systems is the process of Design,⁸ which is a process that has its roots in General Systems Theory.⁹ This process relies on the cyclical actions of system framing, operations framing, reflective learning and reframing, design formulation, and developing concepts for intervention. The Design process should be both qualitative and quantitative since it forms a continuous background for planning environments. It is a command process for understanding and intervening in complex systems for positive, anticipated process shifts and emergence. Logisticians should read about the Design process in order to determine how it will influence and shape our doctrine.

Recommendations

LSS is a powerful tool for manufacturing and technical business applications, but I offer the following recommendations for the Army logistics community:

- Write an Army field manual on the use of statistical quality control and waste reduction with the caveat that, in complex problems, these tools are not always applicable. Separate this doctrine from LSS and make it applicable to military operations.
- Define logistics preparation of the battlefield (LPB) as a continuous process with feedback loops. Be prepared to synchronize LPB with the emerging doctrine of Design.
- Teach basic statistical methods and waste reduction classes at officer, warrant officer, and noncommissioned officer basic and advanced courses and in the corresponding civilian education programs. The Army is a world-class teaching organization; there is no reason to hire civilian business consultants and contract out instruction for “belts.”

Many organizations have successfully used LSS to increase profits, improve public perceptions, and focus their workforces on quality. By successfully helping organizations limit process variation and reduce wasteful processes, LSS has generated interest and a substantial following in business and management circles. This interest has helped found an industry focused on selling training courses and books on how to copy the success of Motorola, General Electric, and others who have benefited from LSS.

The Army should recognize the positive aspects of LSS while being careful to exclude elements that are not applicable to military supply chains and processes. The U.S. military is not a business, is not organized as a corporation, and does not view organizational success based on a quarterly earnings statement or a stock price. This distinction separates the Army from Motorola, General Electric, and other organizations that have found success through LSS. For example, the Army should not institute just-in-time logistics because we are an expeditionary force that requires some stockpiling and warehousing (thanks to our long and often tenuous lines of communication). Also, because we operate in complex environments, the Army logistics community must be willing and able to accept variation both as a source of adaptation and as a necessary requirement for supporting disparate operations with often-changing measures of effectiveness and performance.

In an expeditionary environment, efficiency and effectiveness can have an inverse proportional relationship. Risk in supply chains dictates the amount of stockpiling required to adequately support operations. As a general rule, risk increases the requirement to stockpile. This nonlinear relationship is another reason that using a “corporate model” and LSS is not compatible with military operational requirements. While businesses tend to view success in terms of stock prices or profits, the military is successful if we defend the Nation and provide sovereign options for our political leaders. **ALOG**

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⁸ This methodology is explained in TRADOC Pamphlet 525–500, Commander's Appreciation and Campaign Design, and SAMS Text—Art of Design Version 1.0, Booz Allen Hamilton, 24 September 2008.

⁹ Ludwig von Bertalanffy, “An Outline for General Systems Theory,” *British Journal for the Philosophy of Science*, Vol. 1, No. 2, 1950, pp. 134–165.

LOG NOTES

It's a Transportation Movement "Release"

I have noticed after searching through several back issues of *Army Logistician* that a certain term has been incorrectly stated (or spelled out) on multiple occasions in your magazine.

The term transportation movement release (TMR) is defined in Field Manual 4-01.30, Movement Control. It is used correctly in "Movement Control in Europe" by Captain John D. Kaylor, Jr. (July–August 1998). However, in several recent articles over the last few years, incorrect usage has gone unnoticed. (See "Using Central Receiving and Shipping Points to Manage Transportation" in the November–December 2007 issue as an example.)

For obvious reasons, many logisticians mistakenly refer to TMRs as "transportation movement requests." One reason why this error is so pervasive (even amongst my fellow transporters) is because the incorrect term has appeared in automated systems like BCS3. It would be unfortunate for the logistician's magazine of record to perpetuate this mistake.

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Sustainment Commands Need Improved MTOEs

While I was attending the Army Command and General Staff College at Fort Leavenworth, Kansas, from 2006 to 2007, I received orders to return to Fort Bragg, North Carolina. I was to be assigned to the 1st Sustainment Command (Theater), formerly the 1st Corps Support Command (COSCOM). I had been with the 1st COSCOM before, from 1999 to 2002, and thought I was familiar with the units and mission. Upon my return in July 2007, I immediately deployed to Kuwait to join my unit. I recognized faces and the unit patch, but the task organization and mission had changed.

In the past, the unit was led by a brigadier general and had a corps support mission aligned with a linear battlefield. But in today's fight, the unit is authorized a major general and has a full-spectrum operations mission that encompasses the entire U.S. Central Command (CENTCOM) area of operations (AO)—quite a difference in scope and scale. Initially, the unit was an Army Forces Command (FORSCOM) unit on deployment

orders for a specific time. However—no real surprise to Army personnel—things changed, and our mission became an enduring mission, just like Third Army's.

The Army as a whole has changed very rapidly during the last 9 years in order to meet the requirements of a modular force. Logistics has been no different; we, too, have had to change with the times into a modular force. The COSCOMs of the past are now split into sustainment command (expeditionary) (ESC) and sustainment command (theater) (TSC) forces. The ESCs are commanded by a brigadier general and the TSCs by a major general.

Changes are still ongoing, but one, in particular, needs more attention. The modification table of organization and equipment (MTOE) for a TSC is still set up like a FORSCOM unit. It is designed for a deployment for a specific mission and a specific time period. With the change to an enduring mission, rotation of active forces in and out of theater for an indefinite time period is presenting itself to be an extremely cumbersome endeavor. Dwell time for logisticians is an issue. Soldiers on permanent change of station orders into the TSC are coming from units that just got back from a deployment.

Coupled with the ever-changing scope and scale of areas to cover within the CENTCOM AO, the TSC MTOE is not set up to adequately execute the mission. Third Army has a derivative unit identification code (UIC) in its MTOE for its operational command post here in theater to cover its mission. This derivative UIC is recognized by Headquarters, Department of the Army, as an enduring mission and is sourced accordingly. The TSC MTOE needs this same setup.

The Army Combined Arms Support Command (CASCOS), at Fort Lee, Virginia, has been working on the changes from a COSCOM to an ESC and TSC for years and has made enormous strides in advancing the logistics forces into the current modular force structure. However, we still need attention in the MTOE evolution of not just the 1st TSC but every TSC that is assigned an enduring mission for future operations. Perhaps the answer lies in providing an enduring MTOE that is only activated and sourced upon the TSC's assignment as an enduring logistics force, as the 1st Sustainment Command (Theater) is involved in presently.

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R&R: Reading and Reviews

The Second Battle of the Marne. Michael S. Neiberg, Indiana University Press, Bloomington, Indiana, 2008, 217 pages.

The Second Battle of the Marne moves our understanding of the pivotal World War I battle forward in ways that should particularly appeal to logisticians.

The preparations for offensive actions in France crippled the operations as much as they helped. The massive artillery preparations that preceded an infantry attack caused so much damage in the immediate battle area that moving forces forward across the battle zone became problematic. Furthermore, transportation infrastructures had matured behind the battle area, making the rapid movement of enemy reserves to the threatened area relatively simple. Every threatened penetration “breakthrough” or the lesser “break in” could therefore be easily thwarted.

The German Spring Offensive of 1918 wilted in part from a dwindling ability to sustain the forces at the forward edge. Studies of the beginning of World War I discuss the centrality of the German railway system to the German Army’s efficient mobilization. Broader studies note the importance of the expanded Russian railway system’s contribution to Russia’s unexpectedly rapid entry into the war.

Few studies have dwelt on the French railway system other than to note that everything ran through Paris. However, Michael S. Neiberg suggests in *The Second Battle of the Marne* that the French were as adept as the Germans at moving forces laterally along the front. The French rail system delivered men to points close to their tactical sectors almost all the time. Standard interpretations of the battle still hold true. Neiberg, however, expands on the strengths of French logistics.

Moving from a consideration of railroads, Neiberg calls the reader’s attention to the critical role of “French industry...[which] performed truly amazing feats to supply French soldiers with new weapons.” (He could have addressed the critical role French supplies played in equipping American Soldiers.) Neiberg then proceeds to detail French tank and aircraft production. Noting the strength of the artillery assigned to each division, he points to the emergence of an artillery reserve topping 11,000 guns—half of which were heavy-caliber weapons. This reserve belonged to an Army whose main prewar assets were infantry soldiers armed with rifles and bayonets.

As the Germans pushed their offensives forward, they inevitably formed salients. The Germans’ capture of the key road and railroad center of Soissons enabled them to sustain the 40-odd divisions holding the Marne salient, but Soissons was near the western shoulder of the line. Neiberg argues that further German success demanded the seizure of Reims because sustainment capabilities through Soissons were barely adequate to support the force required to hold the salient. (As I wrote in *Soissons 1918*, the vulnerability of Soissons was a major factor in what became the opening move of the Allied Aisne-Marne offensive, the beginning of the second battle of the Marne.) The Germans had to either abandon the route or open the only other available route through Reims. French Field Marshal Ferdinand Foch saw that vulnerability and began planning to attack it at the first opportunity. This, Foch divined, meant the capture of three rail centers: Reims, Epernay, and Châlons.

The French rail system delivered men to points close to their tactical sectors almost all the time.

Neiberg argues that while Paris became a German objective later, the Germans understood that the seizure of this rail network was crucial to anything else they might want to consider. Neiberg writes, “Before the Germans could hope for a big victory, they had to improve their supply arrangements.” This rail network, not Paris, he argues, was the immediate objective. Without it, Paris was unobtainable.

The rail network should not be viewed as the single cause and single solution to the search for mobility and victory on the Western Front, but Neiberg’s presentation is the most logistically focused presentation to appear in many years. *The Second Battle of the Marne* persuasively shows that logistics considerations trumped all others in this closing campaign on the Western Front. This book is also a good companion to studies of the final campaigns in Palestine and Mesopotamia.

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Lean Thinking: Banish Waste and Create Wealth in Your Corporation. James P. Womack and Daniel T. Jones, Free Press, New York, 2003, 396 pages.

Lean is a technique that has been embraced by all branches of the military. The Army has merged the concepts of Lean and Six Sigma, and the Air Force has AFSO-21 (Air Force Smart Operations for the 21st Century), which incorporates Lean, Six Sigma, and the Theory of Constraints. However, making Lean a policy does not ensure that the individuals in the organization understand the theory of Lean. This is where *Lean Thinking* comes into play. While authors James P. Womack and Daniel T. Jones certainly did not invent Lean, they did manage to compile the concepts that make up Lean in one, easily readable book. I would suggest that anyone interested in Lean make this their first reading assignment.

The authors begin with the basic concept of “muda,” or waste. They contend there are various types of waste everywhere. Lean thinking is the antidote for muda. Lean is the elimination of waste—anything that does not create value. And value can only be defined by the customer in terms of a specific product at a specific price at a specific time. Thus, Lean is a value-added concept based on customer satisfaction.

In many cases, success is a firm's worst enemy, as the emphasis switches from the continuing elimination of waste to simply managing the initial success.

The first steps in Lean thinking are identifying the value and the “value stream.” Value stream is the set of all actions required to bring a specific product through the three critical tasks necessary to put a finished product in the hands of the customer.

Next is the concept of “flow.” Flow is the antithesis of the common batch-and-queue manufacturing mentality that permeates most manufacturing companies. Small lot production is required, based on the “optimal lot size of one” view.

Following flow is changing to a “pull” strategy, where the product is pulled by the customer, rather than pushed by the producer. Producing to a forecast only creates more waste.

The last principle of Lean thinking is “perfection,” or the elimination of all waste. This should be the ultimate goal of any firm, and it is one of the reasons the authors are not keen on benchmarking. Why should one emulate an existing firm that may itself be

full of waste? Why not use the concept of *kaizen*, or continuous improvement, to drive the company?

The authors stress that any firm wishing to transition to Lean needs to have a change agent. This is a person who is knowledgeable and adamant about the value of Lean and who can, if necessary, force changes upon the firm. The authors spend considerable time on the problems of culture change in firms and the necessity to use Lean principles continually to eliminate waste. In short, the true Lean company is never satisfied with where it is but is always striving to improve or reach perfection, even if perfection is an unreachable goal. Employee buy-in is a necessity, and it is crucial that employees do not view Lean as another reengineering attempt to reduce employment. Many of the authors’ examples (after an initial reduction of the workforce) guarantee that no employees will be terminated because of Lean events.

The book is replete with examples of successful Lean implementations that are broken down by size of firm, type of industry, and country of origin. It also includes a general action plan for implementing Lean. Repeatedly, the authors emphasize the difficulty of implementing and continuing a Lean strategy. In many cases, success is a firm’s worst enemy, as the emphasis switches from the continuing elimination of waste to simply managing the initial success. The authors contend that the best time to switch to Lean is during a crisis, and they even suggest inventing one if no crisis is handy.

Anyone involved, or contemplating becoming involved, in Lean, or anyone who thinks they understand Lean, should read this book. It will not make one a Lean expert overnight, but it will make the point that Lean is a vastly different way of thinking. As such, it requires major changes in an individual’s viewpoints. Lean is not a one-time event or a simple cost-saving measure. It requires a dramatic restructuring of a firm and must encompass both suppliers and customers if it is to be done completely.

The authors finish up with a discussion of what they call the Lean enterprise, which includes the entire supply chain, from supplier’s suppliers to customer’s customers. They could find no examples of this in the “real world.” The book is an easy read and is packed full of information. It should be required for anyone in any line of work.

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ALOG NEWS

TRANSCOM MERGING ARMY AND AIR FORCE PORT AND TERMINAL SYSTEMS

The Department of Defense is merging existing Army and Air Force systems to create a single port and terminal processing and management system. Under the U.S. Transportation Command's Port Management Automation project, the Worldwide Port System (WPS) used by the Army's Military Surface Deployment and Distribution Command will migrate into the Global Air Transportation Execution System (GATES) used by the Air Force's Air Mobility Command. WPS and GATES have worked separately to provide different services to the same cargo and military passengers. The new system will reduce duplication, provide cost savings, and enhance capabilities.

During the first phase of implementation, in November 2008, regional databases at Fort Eustis, Virginia; Wheeler Army Air Field, Hawaii; and Rotterdam, the Netherlands, migrated into the GATES central site at Scott Air Force Base, Illinois.

In the second phase, the WPS terminals at SDDC surface ports will be replaced with remote and deployable GATES servers and the SDDC business process servers at four sites will be replaced with GATES architecture. This phase is scheduled to begin in November. GATES then will support surface terminal, aerial port, and Defense Courier Division cargo and passenger processing and manifesting operations to the joint warfighter.

SUPPLY SUPPORT ACTIVITY CONSTRUCTION STANDARD APPROVED

The new Army construction standard for the multi-class supply support activity (SSA) was approved by the Assistant Chief of Staff for Installation Management on 14 April. Development of the standard resulted from a coordinated effort of the Headquarters, Department of the Army, G-4; the Army Combined Arms Support Command at Fort Lee, Virginia; the Assistant Chief of Staff for Installation Management; and the Army Corps of Engineers.

The standard SSA is a 5-acre facility with 20,640 square feet of covered storage and another 13,125 square feet of outside bulk storage. It will hold approximately 37 deployable containers to support the receiving, turn-in, shipping, distribution, and storage of class

II (clothing and individual equipment), IIIP (packaged petroleum, oils, and lubricants), IV (construction and barrier materials), and IX (repair parts) supplies.

The new Army SSA standard will apply to all Army components' military construction SSA projects effective in fiscal year 2012.

FORT BRAGG TEAM TOPS ARMY CULINARY ARTS COMPETITION

The 34th Army Culinary Arts Competition was held 2 to 13 March at the Quartermaster Center and School at Fort Lee, Virginia. The Army and one Coast Guard team sent 184 participants to the culinary competition.

Navy Culinary Specialist First Class Michael Edwards was honored as the Armed Forces Chef of the Year. The team from Fort Bragg, North Carolina, took home the post's ninth Installation of the Year award and captured seven categories, including the Nutritional Hot Food Challenge, first place in the Baron H. Galand Culinary Knowledge Bowl, and second place in the field cooking competition. Within the Fort Bragg team, individual awards went to—

- Specialist Javier Muniz, Armed Forces Junior Chef of the Year.
- Sergeant Orlando Serna, best in show, patisserie/confectionery.
- Sergeant Orlando Serna, most artistic exhibit in show.
- Sergeant Orlando Serna, best in class, contemporary pastry.

The Fort Riley, Kansas, team took second place for Installation of the Year and third place in the Culinary Knowledge Bowl. Fort Riley's Chief Warrant Officer (W-4) Travis Smith took home best exhibit in show, cold platter, and the best in class, contemporary cooking.

The Hawaii team received third place for Installation of the Year, took first place in the field cooking competition and second place in the Culinary Knowledge Bowl, and was awarded the best team buffet table. Specialist Christopher Bohn, Specialist Ashley Shei, Specialist Christopher Bates, and Private First Class Fernando Martinez won first place in the Student Team Skills Competition. Individual awards within the Hawaii team went to Sergeant First Class Clinton Francis for best exhibit in show, cold appetizers, and Sergeant Shawn Dubois for best exhibit in show, showpiece.

The Coast Guard team took third place in the field cooking competition.

Other individual winners include—

- Staff Sergeant Jose Hernadez, Puerto Rico, for the best ice carving in show.
- Sergeant Michelle Carville, Fort Myer, Virginia, for the best in class, contemporary cooking.
- Sergeant First Class Amir Ahmad, Independent, Army Senior Enlisted Aide of the Year.
- Sergeant Michelle Carville, Fort Myer, Virginia, Army Junior Enlisted Aide of the Year.

TRANSCOM STRATEGIC PLAN WILL GUIDE DEPLOYMENT AND DISTRIBUTION MISSIONS

The commander of the U.S. Transportation Command (TRANSCOM), Air Force General Duncan J. McNabb, has released a new strategic plan that provides guidance for successfully executing TRANSCOM's missions as the Department of Defense's (DOD's) Distribution Process Owner

PROFESSIONAL DEVELOPMENT

ARMY TRAINING NETWORK LAUNCHED

The companion webportal to Field Manual (FM) 7-0, Training for Full Spectrum Operations, is up and running. The Army Training Network (ATN) is the Army's resource for training and trainers that includes the training management instructions and training solutions previously found in FM 7-1, Battle Focused Training. Putting the training information online enables trainers to update it rapidly as changes occur.

Users have access to doctrine as well as training solutions and are able to comment on doctrine, make recommendations for changes and additions to the website, and submit training solutions from the field. The ATN team will evaluate submitted comments and solutions to ensure appropriateness for Armywide distribution.

ATN facilitates communication of new training methods and news from commanders and provides a professional forum for trainers and educators to pose questions and recommend solutions. The site also has tutorials for using the Digital Training Management System and links to the Army Training Requirements and Resources System and Virtual Battle Space 2.

ATN also offers personalized assistance. If trainers cannot find information, they can ask the ATN team questions and will receive a response in 48 to 72 hours. To visit the ATN portal, log in with your Army Knowledge Online user name and password at <https://atn.army.mil/>.

PROFESSIONAL NETWORKING WEBSITE STARTED FOR AMMO COMMUNITY

More than 800 personnel have subscribed to a new website for the ammunition community that

provides interactive ammunition safety guidance, resources, and expert advice. The Ammunition Community of Practice (CoP) was launched 3 November 2008 through a Defense Acquisition University partnership with the Defense Ammunition Center, the Army Combined Arms Support Command, and the Army Ordnance Munitions and Electronics Maintenance School.

The forum allows warfighters to share knowledge throughout the ammunition enterprise and provides information on operations, logistics, training, publications, and systems. Members can browse for information; contribute documents, photos, and presentations; and help other users by sharing their experiences and expertise.

Professionals have already posted more than 500 documents, with many links to sites and locations where information is available to assist in ammunition-related functions. The site also offers an "ask an expert" function that provides information when an answer cannot be found in the forum. This useful link is prominently displayed on the main menu. Once the question is posted, the system forwards the question to the CoP administrators who respond within 24 hours. These responses are shared with the entire community.

As the CoP expands, site administrators are asking members to contribute commonly asked questions along with corresponding answers based on location, duty, or position. These questions and responses will be posted as a ready reference.

The Ammunition CoP is open to all Department of Defense military and civilian personnel with a need to know. Although most members are ammunition professionals, the site benefits individuals who work with ammunition but are not necessarily trained ammunition personnel, such as master gunners, combat arms officers, squad leaders, and ammunition transporters. To join, visit the Ammunition CoP website at <https://acc.dau.mil/ammo>.

(DPO) and provider of common-user transportation. The plan is designed to ensure that TRANSCOM can meet its vision of synchronizing and delivering unrivaled full-spectrum deployment and distribution solutions to warfighting commanders.

The plan states that TRANSCOM must be governed by two imperatives: supporting full-spectrum global plans and operations and forging a synchronized global DOD supply chain. To implement these imperatives, TRANSCOM must be able to accomplish four strategic actions over the long term:

- Moving the force, which entails delivering forces to the point of need and ensuring sufficient surge capacity for the future.
- Sustaining the force, which requires delivering supplies to the point of need, moving patients rapidly, and enhancing the performance of contractors.
- Operating the Joint Deployment and Distribution Enterprise (JDDE), which involves preserving global access, delivering necessary corporate services (including information technology), and developing a ready JDDE workforce.
- Executing portfolio management, which encompasses balancing logistics requirements and resources, advocating for DOD logistics capabilities, and conducting distribution portfolio management.

To support the command's stakeholders and partners, TRANSCOM must improve its ability to provide logistics support to theater operations, enhance distribution processes, modernize the Defense Transportation System, and conserve energy.

A copy of the strategic plan can be downloaded at www.transcom.mil/dpo.

FIRST ARMY LABORATORY RECERTIFIED UNDER NEW ISO STANDARDS

The Army Oil Analysis Program (AOAP) Mannheim Laboratory Center (MLC) in Germany is the first AOAP laboratory worldwide to be recertified under new International Organization for Standardization (ISO) guidelines. The laboratory received the new certification, called ISO 9001:2008, after being previously certified under less stringent standards.

"The new standard allows an organization flexibility in the way it chooses to document its quality management system," said Akwasi Edusei, AOAP MLC quality management representative, "and it enables each individual organization to develop the minimum amount of documentation needed in order to demonstrate the effective planning, operation and control of it[s] processes and the implementation

and continual improvement of the effectiveness of its QMS [quality management system]."

In order to meet the new standards, the AOAP MLC staff had to study the changes to standards and review and update the laboratory's QMS to reflect the changes needed for the certification.

IRAQI VEHICLES USED STATESIDE TO TRAIN SOLDIERS AGAINST IED ATTACKS

The Army is using Iraqi light-armored vehicles (ILAVs) in the United States to train explosive ordnance disposal (EOD) Soldiers who will use the joint EOD rapid response vehicle (JERRV) while deployed. Since JERRVs are not available for training in the United States, an effort by the Joint Improvised Explosive Device Defeat Organization (JIEDDO) provides ILAVs as training surrogates—or JERRV surrogate vehicles (JSVs).

The ILAV is the Iraqi Army's less expensive version of the mine-resistant ambush-protected vehicle which uses the same platform as the JERRV. The ILAV does not meet Department of Defense (DOD) explosive protection and armor standards. So, DOD has approved the vehicle for training purposes only, and the ILAVs are becoming more widely available for predeployment training.

Frank Vigus, Program Manager-Equipment for the JIEDDO Center of Excellence (JCOE) at Fort Irwin, California, said that, until March 2007, JERRVs were available for training, but they have since been identi-

(continued on page 65)



The Iraqi light-armored vehicle that was developed for the Iraqi Army is now being used in the United States to train Soldiers who will drive joint explosive ordnance disposal rapid response vehicle (JERRVs) in Iraq to transport Soldiers and EOD equipment. These training substitutes are known as JERRV surrogate vehicles.

RECENTLY PUBLISHED DOCTRINE

Field Manual Interim (FMI) 4-93.2, The Sustainment Brigade, describes the modular force structure, missions, and operations of the sustainment brigade and its subordinate functional and multifunctional units. According to FMI 4-93.2, "The sustainment brigades consolidate selected functions previously performed by corps and division support commands and area support groups into a central operations echelon." This provides centralized command and control of subordinate units, which are task-organized to meet mission requirements. The missions of the sustainment brigade are theater opening, distribution, sustainment, and Army Universal Task List tasks. FMI 4-93.2 explains the force structure surrounding the sustainment brigade (echelons above and below) and how this structure helps to support the warfighter. It also explains to sustainers the importance of contracting and their role in contracting; strategic-level support; and support of military, civilian, joint, and multinational organization. The FMI serves as an authoritative reference for developing training, standing operating procedures, and tactics, techniques, and procedures for unit operations. Like many recent manuals, the FMI includes lessons learned and best practices from the field.

Field Manual (FM) 3-05.140, Army Special Operations Forces Logistics, previously FMI 3-05.140, is a restricted publication covering logistics for Army Special Operations Forces (which include Special Forces, Ranger, special operations aviation, civil affairs, and psychological operations units). The FM describes the logistics support framework of special operations, which includes the sustainment brigade (special operations) (airborne); the Special Forces group support battalion, group support company, group service support company, and battalion support company; and the Ranger support company, the Ranger support operations detachment, and various platoons dedicated to specific sustainment functions. The document also explains modular force sustainment and the changes that it will present to Special Operations Forces logistics.

FM 7-15, The Army Universal Task List, compiles all Army tactical tasks (ARTs) for the six warfighting functions and their subfunctions in one document. It describes the warfighting functions found in the modular force and their duties (or tasks) within the Army Universal Task List (AUTL). "The AUTL is a comprehensive but not all-inclusive listing of Army tasks, missions, and operations." Commanders and trainers will use the AUTL as a guide for developing

mission-essential task lists and training across the warfighting functions. AUTL also provides a common language and reference system for doctrine, combat, and training developers.

Chapter 4 explains the sustainment warfighting function and its related ARTs and systems. The FM states, "Sustainment is the provision of the logistics, personnel services support, and health service support necessary to maintain operations until mission accomplishment." The four tasks of the sustainment warfighting function are to provide logistics support, personnel services support, health service support, and internment and resettlement operations (including detainee operations).

Logistics support ARTs include providing maintenance support, transportation support, supplies, field services, contracting support, distribution, and general engineer support.

Personnel services support includes human resources support, financial management support, legal support, religious support operations, and band support.

Health service support consists of providing combat casualty care, medical evacuation (air and ground), medical regulating support, and medical logistics.

Internment and resettlement operations tasks sustainers with performing detainee and enemy prisoners of war operations and resettlement operations.

The AUTL does not include tasks performed by the Army as part of a joint or multinational force. Those tasks are compiled in the Universal Joint Task List.

Joint Publication (JP) 3-29, Foreign Humanitarian Assistance, has received some major changes in its newest edition and recognizes the roles played by interagency and multinational partners in planning, executing, and assessing foreign humanitarian assistance (FHA) operations. The document identifies the U.S. Agency for International Development as the principal agency for U.S. bilateral development and humanitarian assistance.

The publication also—

- Defines and explains use of the terms "developmental assistance" and "security assistance."
- Provides figures and tables for the overarching relief process, interagency coordination flow, the composition and functions of a civil-military operations center, and FHA operations and environments (permissive, uncertain, and hostile).
- Offers newly revised sections on organization and interagency coordination, humanitarian principles in the law of war, and Pacific Disaster Center tasking, functions, and programs.

The JP's sections on the International Committee of the Red Cross and U.S. Navy health service support for FHA are also revised.

fied as theater requirements. Needing a substitute, Vigus found the ILAV—developed by Force Protection, Incorporated, and BAE Land Systems for the Iraqi Army—through Foreign Military Sales.

Vigus said the ILAV fills the gaps left by “theater demands, production constraints or competing requirements.” He added that surrogates provide the warfighter with “the form, fit, feel, and function of ‘realistic and comparable’ systems, while freeing production systems to combatant commanders.”

The Army has 35 JSVs based at various training sites, where they are being used for operator and maintenance familiarization. “Once real systems become available these will complement the real systems,” said Vigus, who explained that JCOE is working with other program managers to incorporate radios, vehicle optic sensor systems, and other equipment to make the training experience even more realistic.

MRAP VEHICLES SEALIFTED TO CENTCOM REACH THE 10,000 MARK

The U.S. Transportation Command held a ceremony 23 March at Naval Weapons Station Charleston, South Carolina, to celebrate the Military Surface Deployment and Distribution Command’s (SDDC’s) shipment of the 10,000th mine-resistant ambush-protected (MRAP) vehicle to the U.S. Central Command (CENTCOM) area of operations.

MRAPs originally were sent to CENTCOM by air. Most MRAPs are now moved by sea because one cargo ship can carry up to 200 times the weight of a C-17 Globemaster III at one-tenth the cost. Personnel from the Coast Guard, Marine Corps, commercial

ERRATUM

The captions for the photos on pages 11 and 13 of the March–April 2009 issue of *Army Logistician* are transposed. The photo on page 11 shows an apparatus used for conducting the L-33 corrosion test for hypoid gear oils. The photo on page 13 is of an engine-liner test rig that was used to research the tribology needed for low heat refection engine technology.



A contractor with the 841st Transportation Battalion prepares to load mine-resistant ambush-protected vehicles for shipment from Naval Weapons Station Charleston, South Carolina, to Southwest Asia. (Photo by MSG Kevin Young, 841st Transportation Battalion)

carriers, and the port labor force have helped SDDC and the Navy’s Military Sealift Command move nearly 900 vehicles a month.

The *MV Alliance New York*, which carried the 10,000th MRAP, was the same ship that carried the first vehicle to the CENTCOM theater of operations in November 2007.

Army Logistician (ISSN 0004-2528) is a bimonthly professional bulletin published by the Army Logistics Management College, 2401 Quarters Road, Fort Lee, Virginia 23801-1705. Periodicals postage is paid at Petersburg, VA 23804-9998, and at additional mailing offices.

Mission: *Army Logistician* is the Department of the Army’s official professional bulletin on logistics. Its mission is to publish timely, authoritative information on Army and Defense logistics plans, programs, policies, operations, procedures, and doctrine for the benefit of all logistics personnel. Its purpose is to provide a forum for the exchange of information and expression of original, creative, innovative thought on logistics functions.

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Distribution: Units may obtain copies through the initial distribution system (DA Form 12 series). Private domestic subscriptions are available at \$23.00 per year by writing to the Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954, or by visiting <http://bookstore.gpo.gov> on the Web. For credit card orders, call (866) 512-1800. Subscribers should submit address changes directly to *Army Logistician* (see address below). *Army Logistician* also is available on the World Wide Web at <http://www.almc.army.mil/alog>.

Postmaster: Send address changes to: EDITOR ARMY LOGISTICIAN/ALMC/2401 QUARTERS RD/FT LEE VA 23801-1705.

ISSN 0004-2528
DEPARTMENT OF THE ARMY
ARMY LOGISTICIAN
US ARMY LOGISTICS MANAGEMENT COLLEGE
2401 QUARTERS ROAD
FORT LEE VIRGINIA 23801-1705

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